EDITORIAL
DOMESTIC ENGINEERING

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## SET AN EXAMPLE.

AS long as the world goes around there will be problems—and still more problems. Only when the world ends will problems end. To the real progressive nothing is hopeless, yet there are times when even the finest optimist is tempted to throw up his hands and say, "Oh, what's the use?" That is human nature, and the man who sets an example will never actually know the good he does directly or indirectly. In the conduct of life or business, the practice of living up to high ideals is bound to have a great deal of influence, all of which will have a tendency to improve conditions. No one man can do everything, but each man doing his bit will bring the desired results, in part at least.

The plumbing and heating contractor who is careful about his personal appearance, does business in business-like fashion, conducts his shop on a par with other leading establishments, surrounds himself with the right kind of help, etc., does a good thing for himself and his community and sets a fine example for others in his field. His actions do much to elevate the business in the eyes of the public.

There are many successful men in the plumbing and heating profession today whose ideals are higher than the dollar. They recognize, of course, that money is essential, but their aim in life does not end there. They devote themselves religiously to uplifting the craft within and without. A request that they take part in some progressive activity is rarely refused, and most of the time they are creating the opportunities to further the interests of their profession.

If you have such a man in your community, honor him, co-operate with him and be inspired by his example. If you haven't a man of that type, step into the breach.

## HAVE A GOOD LIBRARY.

THE field of plumbing and heating, characterized as a profession, is often put on a par with that of doctors, lawyers, etc., yet how often do we see a good library in the office of the contractor? Lawyers' and doctors' offices invariably have the standard works of their respective fields, and make a strong impression on the visitor.

The man who thinks there is nothing to plumbing and heating work would be staggered if faced with several rows of books on these subjects. Then again, there are many journeymen who are anxious to learn more about their work, and they should be encouraged. The employer himself can profit, therefore, in more ways than one. A good library is an investment that pays dividends.

## THE MARGIN OF SAFETY.

PRESENT conditions are a boon for the general contractor or builder seeking bids on plumbing and heating work. Contracts are being let at figures that do not represent even a trade in dollars. It means either ignorance on the part of the "successful" bidders or simply taking a chance, hoping to break even. It is noticeable that concerns who know how to figure and have organizations well equipped to do the work most economically are leaving such work alone. Small shops are carrying the load and history tells us what the results will be in a great many cases.

There must be a margin of safety in every transaction. In the case of plumbing and heating work it means getting the cost of labor and materials, plus the overhead and a fair profit. Both overhead and profit are being slashed today. When the factor of safety goes, usually the "whole works" goes with it sooner or later.

Progressive concerns are surviving the business depression for several reasons. First, they have the common sense to say "No" when offered cheap work. Second, they are using other safety factors to keep going profitably, which are: Service, salesmanship, courtesy, window and showroom displays, and good business-building methods in general. When these are employed, continuously, regardless of business conditions, success is assured. It is the survival of the fittest.

The concern that expects to be in business ten years from now must have something more dependable than cut prices. Sound reputations are not built on sandy foundations. The caissons of confidence take a long time to sink, but once in they assure a structure of long standing. The concern that has the courage to discard the "work at any price" way of doing business, utilizing in its place those tried and successful methods which mean pleasure and profit, can do no better than start in today. To delay may mean failure.

# HEATING SYSTEMS *for* GARAGES

## *Answers to Inquiries from Heating Contractors Regarding Methods of Installation*

THE constantly increasing number of automobiles used for pleasure and business is requiring an increase in housing facilities, that is, in the building of public and private garages. As these buildings must be heated, the fitter or heating contractor is called upon to install systems which in may respects, are quite unlike those that would be used for warming other types of buildings. It is so seldom that any two garages are alike in size, lighting arrangement (windows or sky-lights) and other structural features, that each building requires separate and distinct methods of installation, and separate and distinct problems must be correctly solved, if the heating apparatus is to function properly.

"Domestic Engineering" is receiving numerous requests for advice and assistance concerning this class of work. A letter recently received from a subscriber in Iowa reads as follows:

"Enclosed please find rough sketch of a steam heating plant that I was called upon to inspect and see why it would not

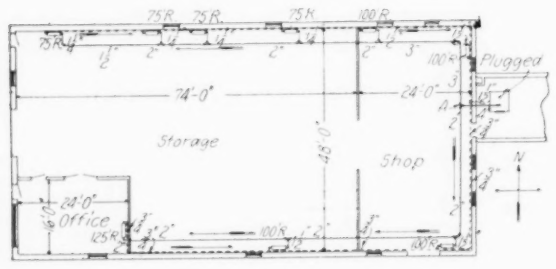


Fig. 1.

work and heat the building, which is a garage exposed on all sides. I would very much appreciate it, if you will please correct the plan submitted and send me the corrected plan showing the installation, as it should be made to work properly and heat the building."

In answer to this letter, and to the communication referred to later, we think a somewhat general discussion of the subject will be profitable. We have therefore diverted from the "Questions and Answers" Department these letters, that rightfully belong there, as the answers and illustrations require more space than could be given them in that department.

The sketch enclosed with the above letter (Fig. 1) is a floor plan of a building covering a space about 50x100 ft. This is divided into three parts; an office 16x24 ft., a shop 24x48 ft., and the remainder of the space, used for storage, is 48x74 ft., less the space occupied as an office. A boiler and coal room has been constructed at the rear of the building, as indicated on the floor plan.

The office is warmed by one radiator, 125-ft., 38-inch, 3-col., the storage room by four 75-ft., 38-inch, 3 col., and one 100-ft. 38-inch, 3-col. radiators—a total of 400 sq. ft.—and the shop by three 100-ft., 38-inch, 3-col. radiators. The total radiating surface in the building is therefore 125 + 400 + 300 or 825 sq. ft.

In addition to a plan of the piping, the following data is marked on the sketch submitted:

Boiler room floor is on a level with the floor of the garage.

Steam radiators are used. These are hung from the ceiling about 18 inches below the mains.

The returns (shown by dotted lines) are 18 inches below the radiators.

Branches supplying radiators are taken out of the side of the main and the flow connection is made at the bottom of the radiators.

Boiler has no steam header or equalizing pipe, and a single tapping of the boiler is used for a 4-inch steam supply. This rises about 18 inches above the boiler and is then taken horizontally through the rear wall of the garage where it rises to a point about 3 inches below the roof truss (correspondent says "ceiling joists"). At this point the supply is divided into two horizontal steam mains, one 3-inch and one 2-inch, as shown on sketch. No bleeder is provided at the base of the main supply riser.

The structural conditions noted state that the building is open to the roof on the inside (no ceiling), and the roof is a pitched roof. The average height from the floor to the roof is about 15 ft. The office is provided with a ceiling and the ceiling height is given as 11 ft. 3 inches. As we may consider that this ceiling is constructed against the under side of the roof trusses it would seem that the distance from the floor of the garage to the under side of the trusses is about 11 ft. 3 or 4 inches. The door, shown on the south side of the shop is 7 ft. wide and 8 ft. high, and the small door leading to the boiler room is about 6 ft. high. From this data we have shown the various elevations by Fig. 2. The return, being 18 inches below the bottom of the radiators, is shown a little more than 5 ft. above the floor, and how it can be carried by gravity across the door on the south side of the building and the door leading to the boiler room without trapping we are unable to state. According to measurements given the bottom of radiators are nearly 7 ft. above the floor.

If our understanding of the sketch submitted is correct, we can see very many reasons why the job does not work; in fact, there seems to be no reason why it should work as it is at present installed.

The number of sq. ft. of radiation provided is sufficient to warm the building to as high a temperature as would ordinarily be required, provided that it is properly located. The usual temperature required for a garage is 55 to 60 degrees in that portion of the building used for storage, 65 degrees in the shop and stock room, and 70 degrees in the office. On this plan the radiators are well distributed, excepting the radiator in the office. This radiator should be located near the southwest corner, between the small and large windows.

The general layout or position of the piping is good, but otherwise the work is very poorly installed. The main on the north side of the building is too frequently reduced to give good service, and there is no mark on the plans or no evidence that eccentric fittings have been employed at points where the main is reduced. As the branches are taken from the side of the main the condensation in it must necessarily flow to the end before it is discharged into the return through the last radiator connected. This condensation decreases the effective area of the main without further reducing the size of it. Owing to crossing the door on the south side of the shop and

the door leading to the boiler room, the return must be trapped as it is (according to measurements given) about 3 ft. below the top of the door and 5 ft. above the floor line. (See Fig. 2.)

The ideal method of installing this job would be to dig out the boiler room about 5 ft. and set the boiler so low that the returns could start about 18 inches above the floor at the extreme end of the mains; then, when the return on the south side reaches the door shown, a dip could be made just below the floor to pass the door. The cement floor could be channeled for this purpose or the return could run underneath the cement. After passing the door, the return could again rise to the top of the floor. The weight of the condensation in the higher part of the return would lift it through the trapped portion below the door.

If for any reason this method cannot be used we recommend the use of a condensation pump of the Chicago or Trane type. Make a pit in the end of the garage next to the boiler room, possibly at a point immediately below the main steam

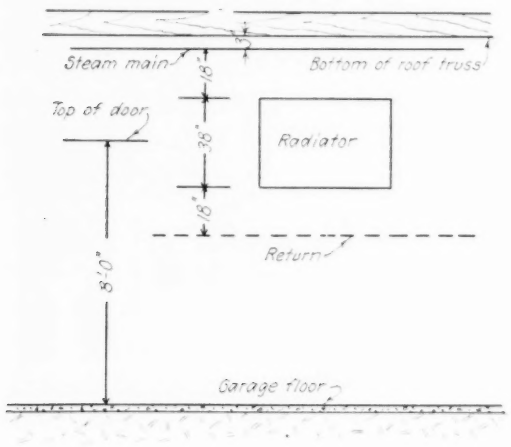


Fig. 2.

riser, and set the pump and receiver in this pit. The pit can have a cover flush with the floor, and it will not interfere with or reduce the amount of floor space in the shop. The returns are now disconnected from the boiler, and having no connection with the boiler they can be located below it. The pump, electrically operated, will lift the condensation to the level of the boiler return, tapping and force it into the boiler against any pressure that may be carried. As the current to operate the pump is used only while the receiver is dumping the cost of the electricity is hardly worth considering.

A steam header should be constructed across the top of the boiler, and both flow openings of the boiler should be connected to the header. A 4 by 5-inch header is of sufficient size. At the rear end of the header an equalizing pipe, 2½ or 3 inches in size, should connect with the return, or, if a condensation pump is used, it may connect with a return opening of the boiler. From the front end of the header, by a swing joint, the 4-inch steam main should be started. This may rise a short distance above the header and then be taken through the wall into the garage, where it can rise to the ceiling to supply the horizontal mains. At the bottom of the vertical riser a drip pipe should connect with the return, before it enters the receiver. This drip line or bleeder should be 1 or 1¼ inches.

The 3-inch main supplying radiators on the north side of the building can be reduced to 2½ or 2 inches at point shown on sketch, but no further reduction in the size should be made. The branches supplying drop risers should be taken from the bottom of the main with 45-degree connections.

For effective service the radiators should be lowered to a point about 3½ or 4 ft. from the floor. There is a large body of cold and heavy air to circulate, and radiators at the ceiling are not effective.

It will be necessary to use radiator traps or check valves on all return and drip connections. Fig. 3 shows how the traps

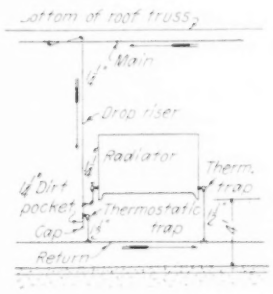


Fig. 3.

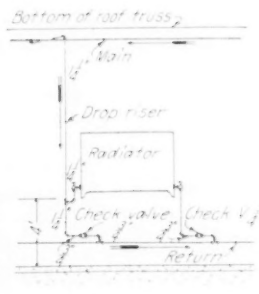


Fig. 4.

should be installed, and Fig. 4 illustrates the method of using check valves. We prefer the use of radiator traps as shown by Fig. 3.

As a fuel saving proposition it would pay the owner to provide a ceiling for the garage. This would save the heating of the large space above the bottom of the roof trusses and the heat loss through the roof. A light frame work covered with beaver board, or similar material, is sufficient for the purpose.

A correspondent from Illinois writes:

"Am enclosing drawing of steam heating plant for a garage. There seems to be a great difference of opinion as to whether this layout will work satisfactorily. Would be pleased if you would look the sketch over and give me your opinion on it."

Fig. 5 illustrates the sketch submitted, of which our opinion is desired. The building, 40x90 ft. in size, has 9-ft. ceiling and is heated by seven 70 ft., 38-inch, 3-col. radiators of the hot water type, a total of 490 sq. ft. of radiation, exclusive of the surface in the piping and the heat radiated by the boiler, which is located at one corner in the rear of the building.

We are not able to check the radiator requirements, as sizes of windows and doors, the character of the walls, and other structural details are not given. Based upon average requirements for a building of the size given, and upon what data

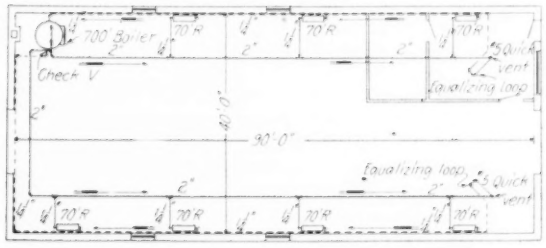


Fig. 5.

is furnished, we should say that 490 sq. ft. of radiation, plus the surface in the piping and heat from the boiler, will be ample to warm the building to a satisfactory temperature in zero weather.

The following notations appear on the sketch submitted:

"Boiler not to be pitted. Steam boiler, size 700 sq. ft. Waterline 58 inches. Radiators 38-inch, 3-col., hot water type, hung on wall 12 inches above water-line. Branches taken from side of main. No. 5 Quick Vent Air Valves and equalizing loop (drip loop or loop seal) used at the end of each main. Return passes doorway at the rear of the building under the floor."

The plan of piping is exceptionally good. That is, the size of the piping and general direction of running the mains and returns. We think that an improvement can be made in the method of making the flow connections from the boiler. The outlet tappings ought to be 3-inch each and these should be connected into a 3 or 4-inch header from which the two 2-inch mains are supplied.

In many respects this job is like that already described, and many of the suggestions made apply equally well to this job. There seems to be some discrepancy regarding the elevations given. Note Fig. 6 showing the elevations of water-line of boiler, position of radiators, etc., which is plotted from the data and measurements given. The radiators are 38 inches high and are hung 12 inches above the water line, which is given as 58 inches from the floor. 38+12+58=108 inches or 9 ft. The top of the radiators, therefore, must touch the ceiling.

The use of quick venting valves at the end of the mains is a good feature, but we can see no good reason for the employment of loop seals or equalizing loops, as shown. If the returns are above the water-line, requiring that the drips from ends

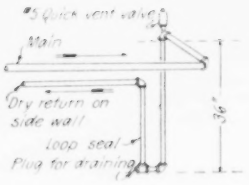


Fig. 7.

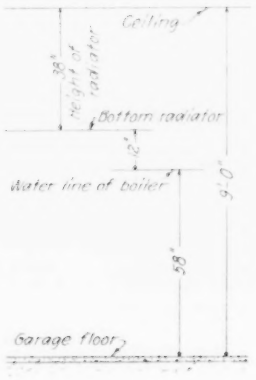


Fig. 6.

of mains should be sealed before connecting to the returns, these returns must cross the windows, which is not a good plan. If they are run under the windows, they are below the water-line and the loops are not required.

We do not believe the job, if installed as sketched and described, will give satisfactory service. The size of the boiler is too small, as we shall later explain, and the radiators are too high for effective service. What we have advised, as to the position of the radiation in a garage, applies to this building, as well as to the one first discussed. If the bottom of the radiators are 3½ ft. above the floor line, they will be from 16 to 18 inches below the water-line, therefore, to install them in the proper position, if the boiler cannot be pitted, it will be necessary to use a condensation pump in the manner already described.

If the job is laid out so that loop seals are required, these will interfere with the movement of cars, unless the mains are run to the side wall and the loops are placed on the wall, as shown by Fig. 7. The seal should be from 30 to 36 inches deep.

While, as stated before, the job is well laid out as to the piping, and sufficient radiation has been provided, we would advise that the boiler is much too small for the job, if good service and economy in the consumption of fuel are details to be considered. A 700-ft. boiler would have to be continually forced in cold weather to give sufficient heat. As correspondent is no doubt aware, it is considered good practice to provide at least 50 per cent more boiler capacity than the actual amount of cast-iron radiation supplied or the equal of it in the uncovered piping. We have for this job 490 sq. ft. of actual radiation and the equal of about 250 sq. ft. in the piping. 490+250=740 and 740×50 per cent = 1,110 sq. ft. of boiler capacity required. If anthracite coal is used for fuel, we should use a boiler having a rating of not less than 1,000 sq. ft., and 1,100 sq. ft. is better. If soft coal is used the boiler should have a rated capacity of at least 1,250 sq. ft.

If a condensation pump is employed and the returns drip dry to the receiver, radiator traps or check valves should be used, as we have suggested and illustrated.

## UNUSUAL HEADING ON ADVERTISEMENT.

One of the functions of advertising is to make the ad. stand out and get the attention of the reader immediately he reaches the page. This can be done with unusual illustrations, special typographical treatment, or clever headlines. The accompanying illustration of one of a series of newspaper advertisements

Did You Ever See a Bath Tub Lined With Gold?
"Standard" Pembroke Built-In Baths
NEITHER did we, but we have seen bathrooms in modest homes that were as fine as those in the houses of millionaires.
Why? For the simple reason that there's a limit to what you can pay for the finest bathroom in America. The living room can have the finest rugs and paintings, the dining room and bedrooms the most wonderful furniture—but the bathroom is the cheapest and best room in the house.
You can enjoy the beauty and comforts of a beautiful built-in tub, shower, pedestal lavatory and closet combination for a very modest investment. And it will be a big investment, because the equipment will last a lifetime and the cost of upkeep will be negligible.
There's no labor for the housewife or the maid to keep a modern bathroom looking spic and span. Porcelain fixtures retain their luster and never wear out.
We have bathrooms that will fit your pocketbook—wonderful outfits that will make you proud of the day you walked into our plumbing shop. Your home can be made the talk of the neighborhood.
Get in touch with one of the undersigned up-to-date plumbing shops today. We will gladly show you what we have and give you an estimate as to the cost of remodeling your bathroom.
JOHN ARGUST
BARNES & MARDEN
F. E. BUMSTEAD
D. I. FLATT PLUMBING & HEATING CO.
N. W. HAAS PLUMBING & HEATING CO.
FRANK PRIESS
GILMORE PLUMBING CO.
McCARTHY & CRANDALL PLUMBING & HEATING CO.
L. M. TRAUTMAN
T. T. MILLS
A. J. WEBER PLUMBING & HEATING CO.
J. C. ST. JOHN PLUMBING & HEATING CO.
The Merchant Plumbers' Assn.

run by the Merchant Plumbers' Association of Colorado Springs, Colorado, enters the class of originality in the plumbing field. Certain it is that people are attracted by the headline, "Did you ever see a bathtub lined with gold?" The advertisement as a whole is commendable in all departments. Its original size was 9x16 inches, an unusually large advertisement. Some time ago the association raised an advertising fund for publicity in local newspapers and also succeeded in getting editorial mention in the various papers in which the campaign was carried on.

# GOOD FARM BUSINESS GOES BEGGING *for* LACK *of* PROPER HANDLING

*The Rural Dweller Has the Same Human Needs and Desires as Other People—Supplying Plumbing and Heating Equipment to Them is Just as Easy and Profitable as if They Lived in Town—The Solution Lies in Adopting the Correct Line of Approach*

*By* E. J. Howard

EVERY survey of conditions in the farm houses and suburban homes, anywhere in the United States, always turns up a lot of facts, possessing convincing evidence that there is room, in a very heavy percentage of these homes, for the service and equipment that are supplied by the plumbing and heating contractor.

As a matter of plain truth, the farmer, or his hired help, who are engaged in doing farm work, are far more in need of a bath, at the end of the day's work, than even the average factory operative in the cities.

After a man has ridden or walked behind a cultivator all day long on a hot day, the dust cloud accompanying this operation has always deposited on his body, an accumulation of gritty dust. The removal of this before supper would result in a high improved state of personal comfort and a higher efficiency for tackling the same job the next day. The same thing goes for thrashing, hay handling, and dozens of other similar farm operations.

**Plumbing and Heating Equipment a Paying Investment.**

The farmer eats and sleeps the same as the rest of us, and works and sweats a great deal more than most of us. He has, usually, more money to spend on the improvement of his property than any other class of property owner, and, as a matter of fact, is a free spender of money for this purpose, as compared to other property owners. Hitherto, the great trouble with the farmer, as a customer for the plumbing and heating contractor, has been due, absolutely and directly, to the fact that the farmer has not been properly interested in those things which the plumbing and heating contractor could do for his property, and which would represent just as good a paying investment as a new reaper and binder or a new gang plow.

The suburban home dweller, as distinguished from the farmer who works the land for a living, should also be a much better customer for the plumbing and heating contractor than has been the case up to date. But, of course, the conditions of interesting this class of trade are different from those interesting to the farmer. The same class of appeal is unlikely to sell both.

However, both can and should be sold plumbing and heating equipment in much greater volume than has been done. This article is intended to be helpful in suggesting some ideas as to effective selling methods in the direction of the farmer who farms for a living.

**The Farmer Is a Business Man.**

A short analysis of conditions will help to clear up our ideas.

First and foremost, the farmer has got to be understood as a business man in business for himself, and operating a complete business plant, of which his home is only an incidental part. Unlike the city dweller, the farmer's home is primarily a part of his working equipment, and only incidentally a home. For that reason, if you want to sell the farmer anything to put into his home, you have first got to approach him along the line that it will be a profitable addition to his equipment.

Practically every farmer looks forward to the day when he shall have made enough money by farming to retire from the farm, and make his home in town. As a consequence, he regards any appeal directed to comfort and convenience alone, as a non-essential matter that is not connected with his main purpose in operating his business—as something to be considered only with reference to the days to come when he has retired from active farming .

Right here is where the appeal to the farmer along lines of plumbing and heating equipment has been decidedly lame.

The bulk of such sales talk has been telling him what a wonderful comfort and convenience it would be for him and his wife and household to have running water, a bathroom, indoor toilets, steam heat, etc.

### Use the Stairs Inside the Building.

In other words, most of the sales talks on these subjects has been attempting to climb up the building on the outside, instead of taking the trouble to locate and easily go up the stairs that are on the inside of the building. Any number of "human flies" have proved, by a lot of hard work and risking of necks every time, that it is possible to climb almost any building on the outside. But the art of climbing the outside of buildings has not yet been developed to the point where it is easy for anybody. The stairs inside still remain the quickest, the most effective, and the most rapid means of climbing the building.

In the writer's judgment, the following are the "stairs inside of the building" of the farmers usual attitude toward the advantages of modern plumbing and heating.

### Start with the Water System.

First and foremost, you have to sell the farmer some sort of water system before you can sell him plumbing. If he does not have a spring, or other source of water supply, that will give him running water by gravity, you must sell him some form of mechanical pressure water system. So, to sell your farmer a bathroom in the end, start out by selling him a water system in the beginning. If he has a natural spring or other supply on his place, that is sufficiently elevated to flow by gravity, sell him the idea of piping this spring.

In any event, to sell him the idea of a running water supply on the farm, don't start talking to him about the comforts that it will bring to the home. Not at all. He is thinking of those comforts as things that will come to him in the far distant future on the day when he retires, and your arguments along that line will fall on deaf ears.

### Talk in Terms of Profits.

On the other hand, if you talk to your farmer about the well-known and thoroughly proved facts that a copious supply of fresh drinking water, properly controlled in the matter of temperature, will speed up the fattening of his hogs, the conditioning of his horses and mules, and greatly increase the yield of his milch cows, you are talking to the farmer about matters that he will immediately recognize as of immediate profit to him, in the present operation of his business.

Also, if you talk to him about the fact that a reliable supply of water under pressure, and properly piped to the neighborhood of his various buildings, will give him a much improved control of his fire hazard, you are again talking to him about something that he will have no difficulty in connecting immediately with the idea of protecting his business and his profits.

From that, it is an easy step to pointing out to the farmer that by putting running water into his kitchen, he will make it possible for his wife and her hired help to devote more time and energy to the production and handling of butter and eggs, for instance. Then, you will again be talking to the farmer about something that he will need no help to understand as being in line with speeding up his profits.

### Use Sanitation in Factories as Selling Argument.

If you have had the normal amount of success that may be expected along the foregoing lines, it is certain that you will then find your farmer in a frame of mind to be shown that protecting his household's health by proper sanitation means that they will be able to show a higher efficiency in helping him operate his business; that he will avoid the expense of medical attention that would otherwise be caused by illness, and so on. At this time, with probable success, you can bring to your farmer's attention the fact that big industrial plants all over the country, and in increasing numbers, are putting in shower baths, and even swimming pools, for their employes, because they have proved, by experience that the worker who has the advantage of convenient means for daily bathing is a worker whose physical and mental efficiency is greatly increased. In other words, he is a worker who can turn out more work, and, therefore, make more money for the business of which he is a part. Trust the farmer to see the point, if your talk is well made.

In this way, talking to the farmer all of the time as a business man, and considering his farm as a business, you are going to get interested attention instead of just polite attention. The inevitable result of such a state of affairs is that you will do a whole lot more selling to farmers. Interest will naturally turn itself into desire.

A great deal more could be said in the way of pointing out to the farmer that his own health, and that of his household, are absolutely the foundation of his possible success in operating his business. There is no class of work in the world in which the actual physical efficiency of the worker is any more important than it is in the business of operating a farm. No matter how good the team of mules may be that is drawing the disc harrow or cultivator, the amount of ground that teams will cover or turn in a day, is dependent very largely upon the amount of "pep" that is in the individual who is driving the team. It will not be hard to show your farmer that if a daily bath speeds up the working efficiency of the steel mill worker, it will have the same effect in speeding up the efficiency of the farm hand.

### Keeping His Children on the Farm.

Don't miss pointing out to your farmer that one of his greatest losses is in his difficulty of keeping competent help—not to speak of his sons—on the farm. Get him interested in the idea that making it easier for them to work is a long step in the direction of stopping this loss.

Or, you can safely remind your farmer of the fact that every illness, and every funeral, on his farm, slows up the operations on which he depends for his profits. Then, you can show him that it has been proved beyond question that modern sanitation of the dwelling unquestionably is a big paying investment in the way of preventing the money expenses incident to the illness or death of the occupants of the dwelling.

### Arrange for Time Payments.

Another thing that must be taken into account in trying to sell the farmer, is the fact that the conditions, under which he operates his business, frequently make it impossible for him to pay fully in cash for improvements. This means that you must so figure your price to the farmer; or so arrange your terms of payment, as to enable the farmer to conveniently finance any business he does with you. Of course, in doing this, you must make sure that you are protected against a possible loss of profits through interest charges or otherwise. However, the automobile men, and the implement men, etc., don't seem to find any difficulty in profitably handling the farmer's business because of these things. The same method of time payments as is allowed in one case, can be applied just as well by the plumbing and heating contractor; and it is unlikely that the farmer would object to paying the

plumbing and heating contractor, the same accommodation rates as he pays to the others.

The big thing to remember with reference to the farmer, according to the opinion of the writer—and that opinion is strongly supported by a great deal of careful investigation and observation—is that the successful approach to the farmer is found along the line of strictly business arguments, first; showing him the money-dividend producing, investment value of what you are trying to sell him, with all other kinds of argument held as strictly secondary.

Remember that the farmer usually has in his mind, a picture of all of the means of modern sanitation and convenience as properly belonging only to that home in town to which he will retire some fine day, when he has made enough to retire on. But just as soon as you show him that by an immediate investment in these things he can hasten that day of retirement from the farm, just so soon have you, got the farmer into a frame of mind in which nothing will prevent him from becoming your customer.

### Planning a Selling Campaign.

Just as a conclusion to this article, let me submit a brief outline of my idea of what ought to prove a successful selling campaign directed to farmers particularly.

First and foremost: Determine just how much territory you would like to cover in a special sales campaign directed at farmers.

Second: Secure an exact and authentic list of the names of the farmers, in that territory, who own and operate their own property. With reference to this, bear in mind that the farmer is just like any other man. When you write to him or talk to him, he expects you to pay him the compliment of knowing his exact name and address, especially how to spell that name properly.

Third: From the county records, or by the courtesy of your banker, get as close as is possible to a definite knowledge of how free the farmer's property is from incumbrance, and what his normal annual income might be. The probable extent of the farmer's financial ability to buy, will naturally be a guide to you as to the amount and kind of selling attention you will exert in his direction. Unless he is in a position to meet his financial obligations, you don't want to waste either time or effort in developing his trade.

### List Prospects on Card Index.

Fourth: Make a card index list of these farmers' names with the related information on the cards. Arrange this list, first of all, geographically, according to county roads or other lines of travel; or according to township, etc., in such a way that you will be able, at any time, to go out and call upon the farmers listed in any particular locality with the least possible expenditure of time.

Fifth: By some means, secure as much reliable information as possible concerning the equipment of each of the farmers on this list. Those, who already have water systems on their place and no plumbing, are, of course, logical prospects for the sale of domestic plumbing equipment, even perhaps, for this plumbing equipment combined with a larger water supply system. Those who do not have any water supply systems, of course, are logical prospects for such systems. If the farmer has a good reliable spring or well on his place, with sufficient elevation to give a gravity water supply, he ought to be readily interested in the subject of having that water piped into his house and buildings.

### Card Index a Valuable Mailing List.

Sixth: After you have got your card index properly made up along the foregoing lines, use it regularly and periodically as a mailing list, by sending out advertising literature secured from manufacturers, accompanying this, at all times, with a sales letter from yourself that will talk to the farmer effectively along the line of his business interests and increased profits from having these things to help him in the current operation of his business plant. For such sales letters, your own language is just as good as that of any one else, provided you are careful to avoid wrapping your ideas up in too many words, and are equally careful to tell the farmer, all the time, the profit-producing side of the requirement you are trying to sell him. You will find the National Trade Extension Bureau, and the advertising or sales department of your manufacturers, always willing to be helpful in the direction of forming sales letters for you that will appeal to the farmer along these lines; always provided that you are able and willing to give them a clear idea of what you would like the letter to be.

### Arrange for Personal Calls Periodically.

Seventh: Make it a practice, every once in a while or so often, to select a group of the farmers in some locality, and make them the subject of a personal call from you. On these occasions, talk to these men along the lines mentioned above in this article.

### Don't Expect Easy Sales.

Eighth: Be on the lookout to carefully follow up any expression of interest that the farmer shows you in return for your efforts. And above all else, don't expect that sales will come too easily. Bear in mind that the successful sale of one complete water system or one complete plumbing installation, will go a long way in the direction of paying you for your entire sales effort covering your entire list of prospects.

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**Emphasizing the sanctity of contracts** a jury in the United States District Court at Baltimore has sustained the validity of the sales contract of the Franklin Sugar Refining Co., subsidiary of the American Sugar Refining Co., for sales of sugar at 22½ cents a pound made during the shortage last June and July. The defendants, Frey & Sons, large wholesale grocers in Baltimore, raised many technical defenses, but the court and jury upheld the sales memorandum as a binding contract.

**In discussion of the problem of tax relief,** it should not be overlooked that the annual tax on freight and passenger transportation collected by the federal government will be $268,000,000. The tax on freight is 3 per cent of the railway rate, and on passenger business 8 per cent. The total tax that the government added to railway rates last year payable by shippers and passengers was $233,070,000, and, as the "Railway Age" points out, the railroads merely collected it for the government. This authority further says that these taxes have the same effect upon the cost of transportation to the public and the movement of travelers as equivalent additions to the freight and passenger rates would have.

**Recent Instructions by the Post-Office Department** to postmasters relate to efficiency in delivery of C. O. D. parcels, and postmasters are enjoined to give these instructions prompt and careful attention. Money orders must be issued and mailed to senders on the same date that C. O. D. parcels are delivered if possible. When C. O. D. parcels are refused or can not be delivered because of failure of the addressee to call at the post office or to have necessary funds to pay the charges, postmasters must use particular care to hold such C. O. D. parcels for the period of time indicated on the sender's instructions, but not in excess of 30 days. Considerable complaint has been made regarding failure of senders to receive notices alleged to have been sent them, and postmasters must, therefore, make certain that such notices are actually sent to senders of undelivered C. O. D. parcels, which do not bear return-postage guarantee.

# HEATING *and* HOT WATER SERVICE *from a* COAL RANGE

## *System Installed in Thousands of English Homes Now Being Built Because of Its Cheapness*

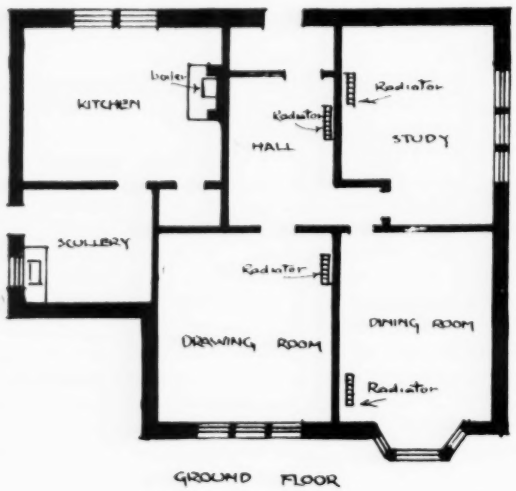
*By* John Y. Dunlop, Glasgow, Scotland

THE work of the English plumber all over the country consists not only of the internal and external sanitary fittings and the internal and external piping for wastes, water and gas and the metal work on the roof, but also of hot water supply and hot water heating when the warming of the home is done from the coal fire.

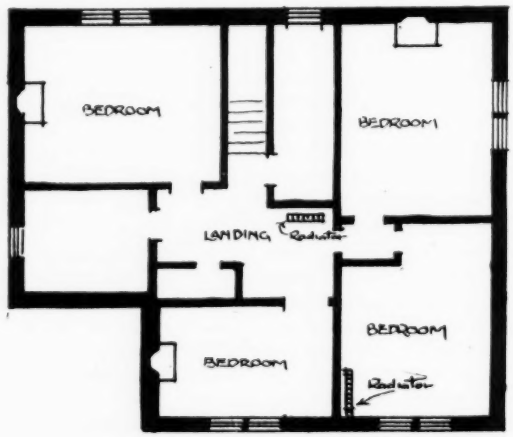
The plumber's specification for a new home always includes the supplying of the hot water boiler which is fitted into the coal range, and thus English plumbers are very anxious that the first extra, which they will secure on the contract, is the order for the coal range.

Naturally, when they have the boiler to build into the range, and since the arrangements of the piping for the hot water supply to the house must pass through it, the type of coal range is of some importance. But apart from that, there is the financial gain and the idea that, having the setting of the coal range anything which is likely to lessen the cost, and one of the features which many of the authorities are adopting is a central hot water supply building. Each central house will supply so many families, the cost being based according to the number of people in the house. The trade difficulty in this case was, were the plumbers to be allowed to carry out the whole of the work? The heating engineer maintained that, being a separate installation, they were entitled to the job. The compromise, which has been arrived at, is that heating engineers are to undertake the contract for the hot water, which means that they will carry out all the work leading up to the circulating tank. From the circulating tank, the plumbers will take their connections and pipe the hot water into the house. In those houses the apartments will be warmed either by coal fires or gas fires.

In houses which utilize the coal range for supply, a low pres-



GROUND FLOOR



FIRST FLOOR

with hot water connections complete, may mean making or spoiling the system of hot water supply.

When the low pressure hot water heating is taken from the boiler of the coal range the plumber becomes the heating engineer. On the other hand, when the heating of the house becomes a separate installation, the heating engineer comes into his own and in that case the line of demarcation allows him to contract and complete the work.

At the present we have a very interesting case of hot water supply for the government housing schemes which is interesting both plumbers and heating engineers.

These houses to which I refer are being built in large groups, as many as a thousand in a district. With the high cost of materials, these communities have been looking around for sure warming apparatus as well as hot water service, the arrangements in many cases have been found both economical and convenient.

The most important part of the system is a suitable boiler as the ordinary range has, as a rule, too little heating surface to give satisfactory results.

Potterton's "Zigzag" boiler, which is shown in the accompanying illustration, contains six times as much heating surface and meets the requirements very satisfactorily. These boilers are made of ⅜-inch welded wrought iron and are fitted with hand holes so that any deposit can be easily removed.

The apparatus is a tank system, and separate pipes are taken from the hot water tank for the hot water service and warming apparatus, respectively. By this arrangement, the hot water

for domestic purposes is supplied at a high temperature. The warming apparatus is a single pipe system, with the tank on the first floor level and the cold water cistern under the roof. The cold cistern is fed from any convenient source by the incoming pipe on the tap side of the cistern. The depth of water in the tank is regulated by a ball float which controls the inlet valve. From the boiler in the coal range the flow and return pipe is carried to the circulating tank, while from the top of the tank the rising main, which goes right up throuh the roof, is run as illustrated.

Coming off the side of the rising main or expansion pipe is the supply to the bath and kitchen fixtures.

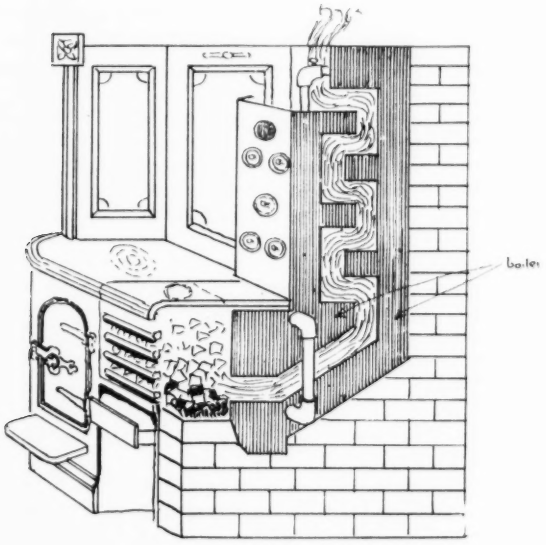
The supply to the radiators, which are on two floors, are shown in the accompanying plans.

The flow and return pipe from the boiler to the tank is 1½ inches in diameter, and the flow pipe to the radiator is taken off the return pipe just as it leaves the circulating tank.

The warming pipe is 1¼ inches in diameter and is laid with a gradual rise to a point between the two radiators on the first floor, from which point it gradually falls to its lowest level and then rises to the boiler.

Each radiator has a gun metal valve and an automatic air cock, and is connected to the main with a 1-inch pipe and gun metal unions or union elbows.

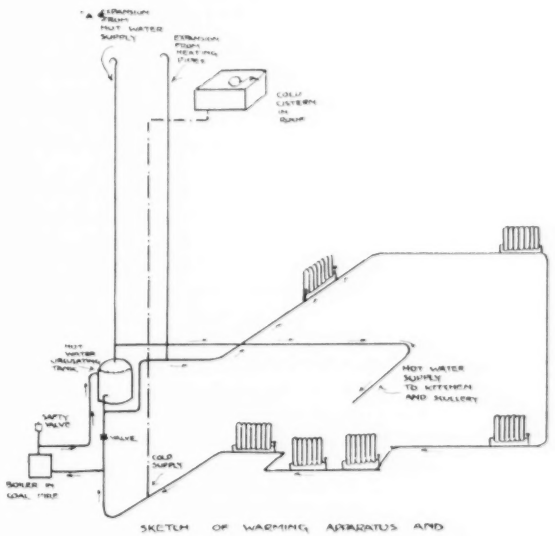
It will be seen that while the whole of the radiators can be shut off from the boiler, it is impossible for high pressure to be generated in the boiler, as both in the case of the domestic hot water supply and the heating there is always an open connection with the expansion.




KITCHEN COAL RANGE FITTED WITH ZIGZAG BOILER

This is probably the cheapest scheme of low pressure hot water warming which can be devised for a small house.

Another system of heating by radiator in this country is where the heating medium is a copper coil built in the back of the sitting room coal fire. The coil has a flow and return connection, the main pipe being 1½ inches in diameter and the branches to the separate radiators ¾ of an inch. From the coal in the fire place is taken the rising main, which is carried up throuh the roof in the form of the expansion pipe. The connection is taken off the main to suply the radiators, when it drops back gradually, to be connected up to the flow return of the coil. At a convenient point just before the coil is reached, the cold supply, coming from the cold water cistern in the roof is connected to the return so that, practically speaking, this second system of warming is much the same as the last, with the exception that one is heated from the kitchen coal range and the other by the sitting room coal fire. The difference in cost of the two systems is not very great, when we consider the cost of the coil against the special range boiler.




SKETCH OF WARMING APPARATUS AND HOT WATER SERVICE FROM KITCHEN BOILER

Both systems are the work of the plumber in this country and should not be confused with heating methods and systems which are carried out by heating engineers.

### Place of Delivery and Passing of Title.

Parties may expressly agree in their writing upon the place of delivery. If a seller has his goods at his shop or produces them at his factory, and if nothing is stated in the writing with respect to place of delivery, the law operates upon a presumption of fact that the seller's place of business was mutually intended. If a seller assumes to put the goods aboard cars at his own expense, and further assumes to pay the freight to the buyer's station, and if these obligations are expressed only as affecting the seller's net price, the seller has fulfilled his obligation to deliver by placing the goods on the cars, and title passes at once to the buyer. But the seller may additionally agree that he will deliver the goods, by his own carriers, to the buyer at a designated place; that pending delivery the title shall remain in the seller; or that prior to delivery the title, as between the parties, shall pass to the buyer; and that, irrespective of where the title is during transportation of the goods, payment shall be conditioned upon actual delivery; that is, that the seller shall be an insurer of safe transportation and actual delivery to the buyer. The problem is to ascertain the intent of the parties.—United States Court of Appeals, in Kokomo Steel & Wire Co. v. Republic of France, 268 Federal Reporter, 917.

**Conversion of the water power of the River Rhone** into electric force will be an accomplishment so great that the resulting power will be able to operate all industries of Paris, besides providing electricity for light and power for scores of cities between the Mediterranean and the Swiss frontier. It is estimated that the project cannot be completed in less than twenty years, but that power production would commence in less than five years if public and private capital is ready.

### Rules as to the Interpretation of Contracts.

The first rule of interpretation is to give to the language employed by the parties to a contract the meaning they intended. It is the duty of the court to do this from the language used where it is plain and unambiguous. Where the language is clearly susceptible of but one meaning, oral evidence to vary the terms of a written contract is not admissible. Where the meaning of the language of the contract is doubtful, or is susceptible of more than one meaning, oral evidence may be resorted to, to show the real nature of the agreement. The admission of such testimony is, within the meaning of the terms employed in the written contract, to render certain that which is uncertain, and to determine just what in fact the writing was intended to express.—Supreme Court of Arkansas in Stoops v. Bank of Brinkley, 225 Southwestern Reporter, 593.

### Contract Not Requiring Return of Furnace.

A written contract was entered into for the sale and installation in a dwelling house of a warm air furnace. The purchasers were to pay $160 for the furnace, one-half when the furnace was installed, and the remainder by a note payable at a later date. The contract contained a warranty that the furnace would warm all rooms to which complete run of pipes had been made to a temperature of 70 degrees Fahrenheit in zero weather, and that "in case the furnace fails to heat house as per guarantee above, and we are unable to correct the fault, we will remove the furnace and refund the money paid."

The furnace, when tested, proved to be too small for the size of house to be heated, and did not meet the requirements of the warranty, though the purchasers had furnished a suitable chimney flue, and in operating the furnace had used proper fuel and had obeyed the directions of the seller, who was notified by the purchasers of the failure of the furnace to meet the requirements of the warranty, and in response made some alterations, but did not, and could not, correct the defect. Whereupon purchasers notified the seller that, in accordance with the terms of the contract, he could remove the furnace. The seller did not remove the furnace, nor did he refund the cash payment of $80.

The note given for the balance of the contract price of the furnace was not paid at maturity, and the seller commenced this action; his complaint being based on said note and the contract for the installation of the furnace. The purchasers filed an answer in denial; also a counterclaim founded upon said contract of warranty demanding judgment for the amount of the cash installment of the purchase price paid.

The furnace remained in the house and was used by the purchasers until the date of the trial.

In affirming a judgment in favor of defandant purchasers for the amount demanded in their counterclaim, the Appellate Court of Indiana says (129 Northeastern Reporter, 407) that the only questions involved in this appeal were: (1) Were the purchasers required, under the contract of warranty, to return, or offer to return, the furnace, before they could maintain an action to recover the purchase money they had paid? and (2) did the purchasers, by their continued use of the furnace after giving the seller notice to remove it, thereby accept the furnace and affirm the contract? The seller contended that each of these questions must be answered in the affirmative, and that this cause must therefore be reversed.

It is well settled, however, that in contracts of warranty the parties may fix the extent, terms, and conditions of the warranty, and may impose such restrictions as they may mutually agree upon. By the terms of the warranty under consideration the seller had specifically agreed to "remove the furnace and refund the money paid," if the furnace should fail to heat the house "as per guaranty," and he was "unable to correct the fault." It is clear that the contract which was the basis of the purchasers' cross-action, and which was controlling, did not require them to return, or offer to return, the furnace.

The furnace in controversy was built into, and was a part of, purchasers' house, and its continued use by the purchasers was a circumstance which it was proper for the trial court to consider on the issue as to whether or not the furnace had been accepted by them, but, under the facts in this case, is not conclusive evidence of acceptance. They were not required to forego the use of the furnace, which, though defective, was at the time a part of their dwelling.

### Landlords Refusing To Sign Consent For Removal of Plumbing.

The Appellate Term of the Supreme Court of New York, in reversing a judgment dismissing the complaint in the case of Diener, et al. v. Burghart, et al., 186 New York Supplement, 565, says that the plaintiffs as lessees of the defendants sought to recover damages for the landlords' wrongful refusal to sign the necessary consents in order to remove violations in connection with plumbing work done on the leased premises, and so as to make the premises fit for occupation by the plaintiffs in the carrying on of their dental business.

The plaintiffs' proof tended to show that at or about the time of the signing of the written lease for five years the landlords were informed of their purpose to carry on their business at the demised premises, and at the request of the plaintiffs they recommended a plumber to do the necessary plumbing work, and they also recommended other workmen to make the necessary changes required by the plaintiffs in the premises; that the sum to be paid the plumber for the work was fixed by means of negotiations through the landlords; that after doing some work and getting payments it developed that the plumber was an unlicensed plumber, and the work was done improperly, and necessitated the employment by the plaintiffs of a licensed plumber, and the preparation and filing of plans by an architect, as well as the consent of the landlords to the doing of the work as outlined in the plan; that the landlords refused to give their consent, as required by the municipal departments, by reason of which the plaintiffs, after the payment of rent and the expenditure of moneys for the services of workmen and the architect, surrendered possession of the premises.

The trial judge erred in dismissing the complaint at the close of the plaintiff's case. The fact that the lease provided that no alterations should be made in the premises without written consent of the lessors was not controlling, in view of the uncontradicted testimony which authorized the conclusion that the premises were let by the landlords, so that the plaintiffs could carry on their dental business therein, and that the landlords, by their active participation in procuring workmen for the plaintiffs, must be deemed to have consented to the making of the necessary changes, so as to make the place fit and proper for doing their work therein. Under the circumstances as testified to, the landlords could not insist upon a written consent to the alterations.

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# A Simple Recording System *for the* Small Shop

## *A Method of Bookkeeping That Will Require a Minimum Amount of Attention While Retaining All the Essentials of Accuracy*

*By* David H. Cuyler

IN the vast forever of ideas, it sometimes happens that we stumble onto something that is really worth stopping to ponder over. A daily routine of calling at plumbing and heating establishments over a wide range of territory has given the writer many opportunities to observe where observation was not meant to be. That is the penalty for being a writer; we grow to see just heaps of things that escape the ordinary eyes of man.

Many months ago it became a matter of personal interest to study the methods and standards of the general run of small shops where regular daily employment took my weary feet and observant optics. Many the secret learned and many the suspicion of worse ones hidden, but we are to mention no names so no manner of harm will result.

We are wise to cover up unpleasant facts, or to happily veneer these with more cheerful words, but herein we are not to chant the song that pleases, except in the final text where the reason for these former ones is set down. So, in an effort to hold up the lily undefiled in its natural habiliments, we have to make the statement that the vast majority of plumbing shops of the smaller class, that we have whiled away an hour within, are a very far cry from places that could be classed as being orderly in appearance or methods.

Many of them have stumped the writer beyond doubt. He simply cannot attempt to picture them. Many more were fast falling into the slough of don't-give-a-care, and some showed a half-hearted sort of effort towards better things. It is painful to have to record that very few of these places, comparatively speaking, could be truly termed as classy. It is an odd thing, but nevertheless apparently true, that there is no middle class in these establishments. They are all "awful raggedy" or they are a "thing of beauty." All of which goes to show that when we once let go and start down grade, we don't stop until we land in the mire at the bottom. It is a heap easier to slide down than to climb up, but you won't find the good things in life at the bottom of things; they are to be found up there where we have to climb for them.

These pages lately contained an article by the writer on shop appearances and the value of such as an advertising medium, so it will not be necessary to dwell further on this phase of the matter. In this article it is proposed to bring before the reader a system of shop recording that has proved to be not only quite efficient within its limited scope but so simple that the smallest establishment may adopt it with no great effort and little expense. It is bookkeeping reduced to nearly its lowest form of utility, while at the same time retaining the essentials for accuracy.

There is no valid excuse for any self-respecting business man to conduct his affairs, personal or otherwise, with no regard for care and thoughtfulness, and yet we have found many, especially among the "one man" shops, where the business is not conducted at all. It just wallows along somehow; that's all. A business, large or small, without some good recording system is like a ship without a rudder. There is no better simile that we know of.

Certainly the small shop, where the proprietor is in and out all through the day and where the clerical duties depend on the ability of a single office employee, does not require and should not be clogged with intricate recording systems and card indexes. Neither is a cumbersome set of books necessary. There are shorter routes than this; routes that insure all the required efficiency at a minimum

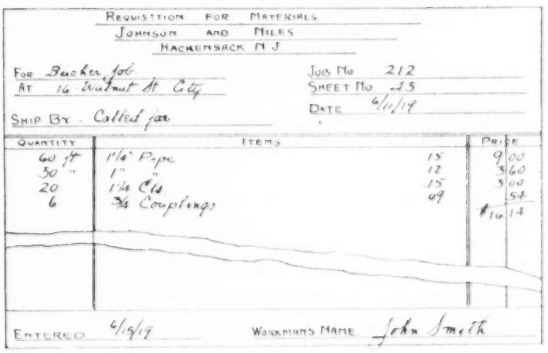


**Fig. 1.**

of effort and time. Such a system we propose to present herein.

The incubus of a ledger may be terrible or it may be no incubus at all. The ledger for the small contractor need be only a simple record of open accounts both collectable and payable. The old-fashioned single entry system is simple and workable and will be all that is required for a complete record of the financial end of a small business. The headings that have proved sufficient for all except possible special items are listed below:

1.—General Expenses. Include entries for:

- Postage.
- Stationery.
- Drawing Materials.
- Lighting.
- Fuel for Heating.
- Window Cleaning.
- Express and Freight Charges except where these are chargeable to Jobs.
- Repairs to Fixtures.
- And other General Items.

2. Furnishings and Fixtures. Include entries for:
   Furniture.
   Typewriters.
   Safe.
   Signs.
   Delivery Vehicles.
   And other Items that Figure as Assets.
3.—Fixed Charges. Include entries for:
   Salaries.

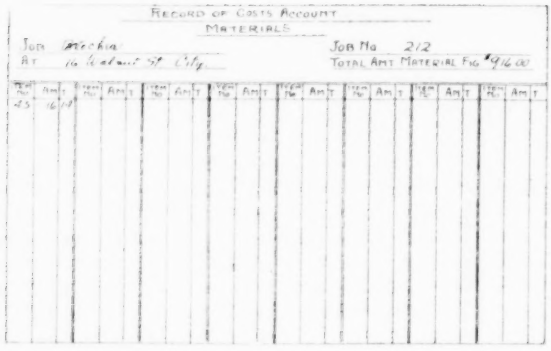


Fig. 2.

   Profits withdrawn if any.
   Rent or Interest on Property Investment.
   Insurance.
   Tools and Equipment.
   And other Fixed Charges.
4.—Open Accounts. Include entries for:
   All Firms from whom Bills are received regularly.
   All Customers who have Running Accounts.
5.—Temporary Accounts. Include entries for:
   All Customers whose Accounts will close at the Completion of One Contract.

The above five divisions with the sub-divisions given, will cover in a general way, all the usual items which enter into the ordinary business of the small shop. The effort should be rather to simplify than to confuse by the addition of uncalled for headings, but space should be provided so a complete record of the business can be kept, properly divided for easy reference.

Other individual records may be required, such as jobbing accounts, garage expense, etc. The summary of the ledger accounts will of course be governed by the magnitude of the business, but it will be a good rule to adhere to the line of simplicity where it is possible to do so.

Fig. 4 is a single entry ledger record in the simplest possible form. It is shorn of all trimmings and uncalled for rulings, but it tells its story quickly and plainly, and that is what we are seeking. It may be varied to accommodate debit or credit accounts as usual. The better plan is to use the loose-leaf type of book, so that old and dead matter can be removed and new leaves inserted at pleasure. The book should be indexed throughout on the side margins. Small leatherette letter tabs may be purchased for this purpose.

We now come to the important recording devices from which the ledger will receive the material it thrives upon. Here again we find simplicity and a pleasing lack of complex methods.

Most small shop affairs divide into several major operations: First, the material purchases which are recorded in the ledger as above outlined. Second, the contract and jobbing sales records and other income business. Third, the overhead and general expense records. The recording of the second group of operations may be accomplished in several ways, either in a set of cumbersome books or in a more simple and pliable card system, but it will profit us if we recall the story of the man who said he was so busy keeping up his card systems that he did not have time to go out and look for business. We want to fight shy of that kind of thing.

Figs. 2 and 3 are two simple cards designed to record all items chargeable to separate contracts and jobs. Fig. 2 is a Material Record card, the entries in its columns being taken from material bills where materials have been delivered direct to the jobs and from the requisition blanks (Fig. 1) handed in by the workmen. Fig. 3 is a Labor Record card, the entries being the total labor charges for each week throughout the progress of the work. From these cards the ledger entries are made in condensed form. We have shown several entries on the illustrated cards so that the system may be readily understood. Standard forms of time sheets may be had at any good stationer's, or regular printed forms may be used showing the firm's name.

The system does not require a separate time-recording book as will be seen. The weekly time sheets are figured out, and on the reverse sides the computing of money due the employee is placed, and payment is made from this record, thus the whole operation is shown on one piece of paper. Then, on a separate piece of clean paper, we list the time charged to each job or contract, adding up the total money paid out on each for the current week. From this, the entry on "Record of Costs, Labor" card (Fig. 3) is made. A mere glance at the card, or a minute with a pencil, will quickly show how the labor items are running in comparison with the amount of labor money allowed, which is shown at the top. This is quite an important matter to know at all times.

A filing system will be required for the cards and this also may be intricate or simple. The cards should be of a standard size, and it is best to have the material cards of a different color than the labor cards, so that they may be easily distinguished. A stock card, 5 x 8 inches, is a good serviceable size to use and prevents cramping of the written

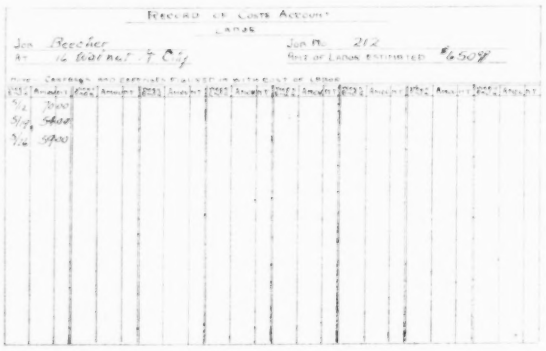


Fig. 3.

records. Any print shop will furnish these and will print the faces of them to suit your requirements.

A heavy sheet metal filing case fitted with safe locking device can be had for filing these records. First will come the guide cards, lettered from A to Z, thus providing spaces for sub-division of record matters. For example, say we have a contract called the Beecher Contract. All matters pertaining to it would be filed under B. A good method for keeping all of the separate records together is to use heavy manilla envelopes of the size of the filing case. The name and number of the contract or job will be written on

the upper left hand corner of the envelope, and this will be filed away in back of the letter in the file where it belongs. Each envelope would contain eventually all material requisitions, bills, time sheets and the two recording cards applying to the job, all kept compactly and in one place, ready for immediate reference when required. In the case

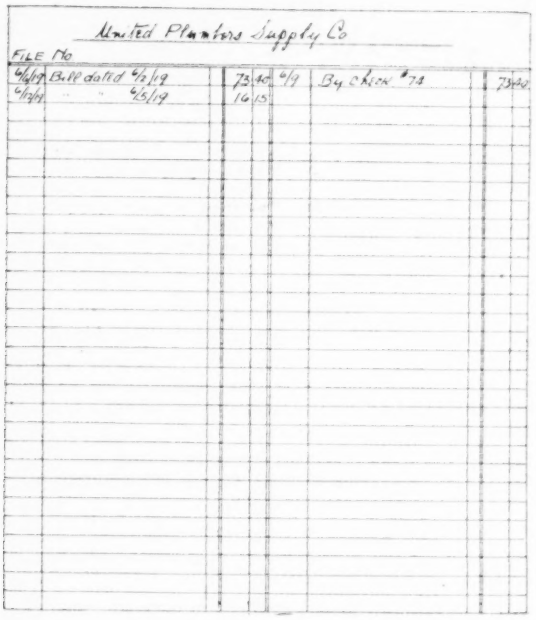


Fig. 4.

of a large business, this method would soon become bulky, but we are not talking to large business just at present.

With the above system in operation and an ordinary petty cash book, the usual correspondence files, etc., a shop will be equipped to meet the scrutiny of the most exacting at any time.

There should of course be a material order book, and the rule of having no materials received that have not been ordered on the firm's regular order blanks, is a good one and should be rigorously enforced, for this will prevent many complications. Further, each bill presented for payment should bear on its face the order number on which the material bill was delivered, and the face of the order blank should call for this requirement. The order books should be bound volumes, each original sheet provided with its duplicate of a different color; both perforated so that they may be torn from the book easily. The original is given or sent to the house which is to furnish the materials called for. The duplicate is held in a basket on the bookkeeper's desk until the bill covering it comes to hand, when it is checked and, when the bill is paid, both are filed together in the envelope for the job.

In ending, we should warn those who undertake to install such a recording system that the practice of permitting each man to go to the storage bins to help himself to needed fittings and supplies, will have to cease with the inception of the system, for one deviation from this rule will effectually upset the whole plan. No materials should be taken from the store room unless each item is fully covered by a requisition order made out either by the man taking the materials or by the office attendant. It makes little difference who fills out these requisitions as long as they are filled out and filed. The space provided on the requisitions for figuring the cost of materials is of course filled in at the office. The workmen will have no part in that, as it would likely mix things up badly if they did. The sheets are figured from current price lists or from late bills, the totals carried out, and this total is entered on the "Record of Costs—Materials" card for the job (Fig. 2). A small amount of time given to study of the cards will at once make the plan understandable.

We are aware that this system will not be as complete as would be required for a large concern, but it is simple and readily expandible into a more intricate device. It is the small shop we are addressing herein, and we believe the device, as pictured, will provide all means required to carry on such a business, efficiently and quickly.

## ONE DAY'S SALES—$2,100.

"The sooner we get the notion of merchandising, the better it will be for us, as there is little profit and much grief in selling labor," said a progressive contractor to "Domestic Engineering." "The things sold should be somewhat related to the plumbing and heating business, such as water supply systems, washing machines, etc. I sell from fifteen to twenty-five water supply systems and about fifteen electrical washing machines a year. Half of this business usually comes from the country, which I believe is a good field for the plumbing and heating contractor. Last year was one of the poorest I have had from a merchandising standpoint, as I could not get out and go after the business. One time I took a day off from the shop and went out and sold $2,100 worth of merchandise, which I think is a pretty good day's work. I simply followed leads secured through advertisements and through satisfied customers. I haven't the time to do general canvassing, but often call in person to clinch a sale after I have gotten what I think is a live lead. The majority of the farmers prefer to do business with a man they know or who has done satisfactory work for his neighbors. For this reason it is important to get acquainted with as many of them as possible."

This contractor is also enthusiastic about the progress made in educational work within the trade during the past few years by the National Trade Extension Bureau and the trade papers. "Education," he said, "in matters pertaining to the trade is a good thing for the journeymen as well as the master. When the trade papers come in, I read them over carefully and then leave them on the counter for the men. I believe this is a good idea, for the more they know the better workmen they will be. In this way they can keep in touch with the latest developments in the trade and also learn something of what the master has to contend with."

**A Paris dispatch says** that for the first time since 1905 the foreign trade balance has turned in favor of France. For the first three months of this year exports approximated 4,811,000,000 francs and imports 4,781,000,000 francs. Importations of France before the war, except in 1905, ran from 20 to 25 per cent higher than exports. France exported during the three months 262 per cent more manufactured articles than in the first three months of the last normal year before the war.

**The British Board of Trade** returns show United Kingdom June imports valued at £88,180,000 compared with £86,200,040 in May, being less than 50 per cent of prewar total. Exports totaled $38,150,000 against £43,080,000. Re-exports of foreign and colonial products totaled £7,080,000 compared with £7,230,000 in May. Total exports £45,230,000 compared with £50,310,000 in May. Exports for first half of 1921 were £368,860,000 and imports £572,230,000, making excess of imports £572,370,000. During first half of 1920 imports totaled £1,040,637,000 and exports £637,465,000, making excess of imports £403,172,900.

# QUESTIONS & ANSWERS

**This department is a clearing house for ideas and is open to every reader of "Domestic Engineering." Problems sent in are replied to at the earliest possible moment by "Domestic Engineering," and this department can be made more valuable if readers themselves will help the man who needs assistance. Read the questions and answers. If you have had similar problems, or know from experience how the faults can be remedied, do not hesitate to send in your comment or criticism. It will be some satisfaction to you to know that you have helped a fellow craftman and a pleasure for us to pass on the data. "Every man owes some of his time to the upbuilding of the profession to which he belongs."**

## COMMENT ON WHO IS TO BLAME FOR HOT WATER COMING OUT OF COLD WATER FAUCETS.

Editor "Domestic Engineering":—Referring to the question of blame for hot water coming out of cold water faucets, which was discussed on page 648 in the March 26th issue of your valuable paper, I would like to say that I don't see any advantage in using two boilers. Why not use only one large boiler? But as the arrangement is, I would suggest a lay-

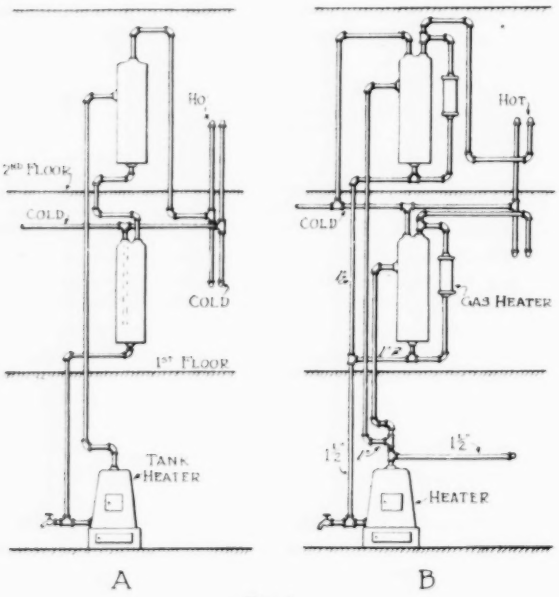


Fig. 1.

out as shown in A in Fig. 1, herewith. In this case all the water is heated from tank heater with hot water taken from the top boiler.

In sketch B you will see both boilers are heated by tank heater, but both boilers are heated separately by gas water heaters.

Kindly publish this for the benefit of H. L. R. of Tennessee. I hope it will help him.

Trenton, N. J. X. Y.

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If the two tenants who occupy the building in question are lucky enough to have their individual range boilers heated all the year around by the tank heater shown, then sketch A may be satisfactory. But if they have to depend on heating the water during summer with their own individual gas heaters, the problem is different. In sketch B in Fig. 1 herewith, correspondent shows how the layout may be made for combination with a gas heater located alongside of each boiler.

The arrangement appears very good and we believe will operate satisfactorily. We would, however, like to hear more about this from some readers who have had experience with similar cases. We are sure that suggestions from the trade on such topics are a great help.

## HOW TO CROSS A BEAM WITH A STEAM MAIN.

Editor "Domestic Engineering":—Will you please tell me, if the job illustrated in the accompanying sketch, Fig. 1, will work right?

Would it be better to place a pet cock at point marked X?

I am asking this question to settle an argument. One man says it will pound, unless the pet cock is there so that the water can be drawn out before firing. I would like to ask you to settle this question.

Massachusetts. W. N. O.

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To cross a beam with a steam main in the manner described by correspondent and shown by his sketch, Fig. 1, the greatest

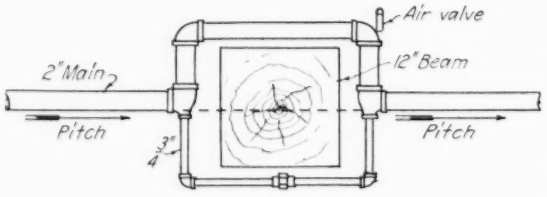


Fig. 1.

care should be exercised to install the work in a correct manner. Unless this is done, water-hammer or the pounding referred to will result. When the pipe is properly graded, and the drip is of the required capacity to pass the water of condensation without choking there will be no pounding or water-hammer. We have indicated on this sketch by a dotted line the grade to be preserved.

When, on account of securing required head-room, it is found necessary to follow this plan the main, on each side of the beam, should be kept on the same level as though the beam was not there to interfere with the installation; then if the size of the drip is adequate, the condensation will pass

into the bottom of the main on the far side of the beam, as fast as it collects in excess of the amount required to fill the drip.

The fitter is quite apt to make one of two errors in erecting the work. If the main on the far side of the beam is higher than on the opposite side as it approaches it, the condensation will be held back as shown by Fig. 2. This will restrict the available steam area of the main and also will cause water-hammer each time that steam is turned into the piping and is required to pass the cold water trapped in the main.

The second condition that will cause the same trouble, unless properly guarded against, is that the drip must have the capacity to pass all condensation freely, otherwise it will back up in the main, as illustrated, and cause water-hammer.

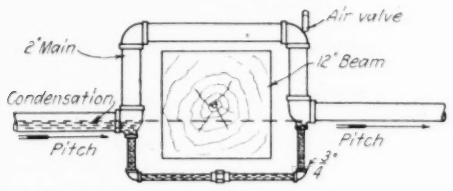


Fig. 2.

When a steam heating apparatus is first fired the piping and radiators are cold and the radiators are surrounded by cold air; therefore a much greater amount of steam is condensed the first hour than will be condensed hourly thereafter. This fact causes an extra amount of condensation to pass through the piping the first hour that the apparatus is in service, and all return drip pipes should have sufficient capacity to handle it without choking. This is particularly true of a drip of the nature illustrated. For a 2-inch main this drip should be 1-inch in size.

## IS LOW PRESSURE STEAM HEAT DRIER THAN HOT WATER HEAT.

Editor "Domestic Engineering:"—I am herewith submitting a problem which has been the subject of considerable argument on the part of "A" and "B," respectively. We would deem it a favor, if it were answered through the columns of your valuable paper.

"A" claims that the air in a room heated by direct steam radiation is considerably dryer than if the same room under identical conditions were heated by direct hot water radiation.

"B" holds the relative humidity of the air in both systems is about the same, admitting that the connecting currents of air passing from steam radiator is dryer. Outside of this the average mean humidity in either system of installation is about equal.

Pittsburgh, Pa. H. P. C.

We think that "A" is right in his contention that the air of a room heated by low pressure steam is drier than the air in a water heated room.

While an equal number of B.t.u. are required to warm a room or building, no matter which system is used, the less the amount of heating surface the more intense must be the heat radiated, and the more intense the heat, the greater the effect will be in drying the moisture from the air. All records of dry room conditions (the drying of materials) confirm this statement.

The relative humidity of the air in a room heated by steam or hot water is a very interesting subject. The usual direct system of steam or hot water heating provides only for heating, and it is necessary to warm a room to a higher temperature to feel comfortable than would be the case if the humidity was kept at a reasonable degree. As we have suggested, this condition is less apparent when hot water heat is used.

## HOW TO CONNECT UP DOMESTIC HOT WATER HEATERS AND BOILERS IN BAKE OVENS.

Editor "Domestic Engineering":—In Fig. 1 you will find rough sketch of boilers I recently installed. I want to know what is the trouble with this arrangement, as I have twice replaced the coil, it having each time been burnt through, leaving the brass coil almost a shell when taken out. The water

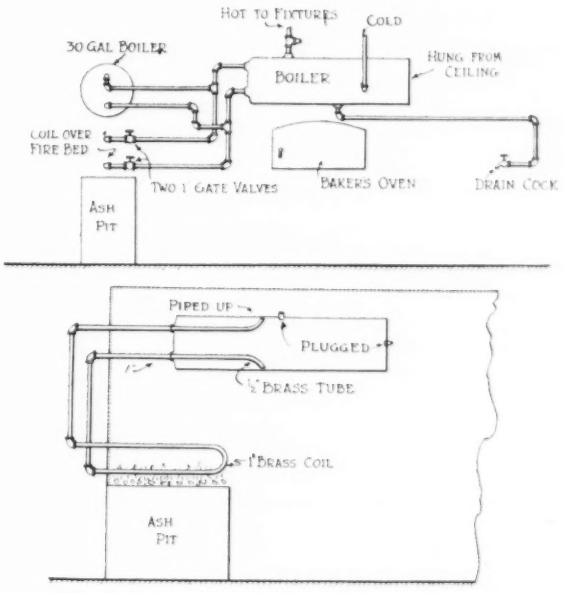


Fig. 1.

gets very hot, in fact steaming hot, even though the safety valve relieves it frequently. I have recently removed the coil and put in a cast iron water back not so near the fire bed and changed connections as shown in Fig. 2, to prevent overheating. But in the position the moment water is drawn the outside boiler gets cold instantly.

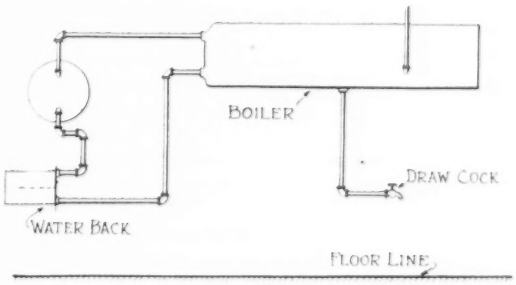


Fig. 2.

How can I make the connections in the proper manner so that water can be drawn from both boilers at the same time. As it appears to me the water in the boiler in oven, which is also heated from heat in oven, laying in sand, remains dead.

Brooklyn, N. Y. E. P.

By your sketch Fig. 2 we believe you take the hot supply from the upper boiler. That is the same boiler, which is fed with the cold supply. That means that this boiler fills with

cold water as quick as the hot is drawn out. The lower boiler takes the cold water much slower. It takes it only by circulation. Therefore all the hot water can be drawn from upper boiler while lower boiler is quite hot. We understand that is your trouble now.

To remedy it we recommend changing the arrangement as

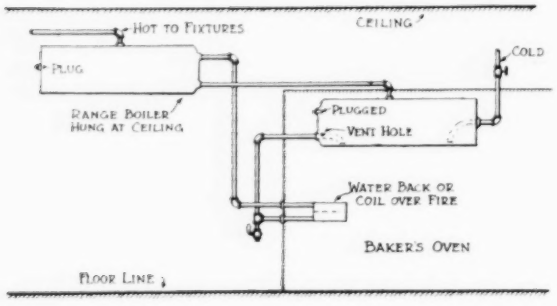


Fig. 3.

shown in Fig. 3. It means feeding cold water to lower boiler only, and drawing hot water from upper boiler only. Thus if both boilers are hot, you will be able to draw both boilers empty. The lower boiler will become cold first. Then the upper one, and cold water should not come at hot faucets, until all the hot water has been drawn from both boilers.

## A VENTILATION PROBLEM.

Editor "Domestic Engineering":—Could you advise me through your "Questions and Answers" department concerning the most practical way to arrive at the proper solution of the following problem:

Our ventilating laws require that for every 6 sq. ft. of floor space there shall be supplied a minimum of 15 cu. ft. of air per second with a velocity not to exceed 325 ft. and with the temperature of the rooms at 70 degrees and a difference of not less than 40 degrees between the temperature of the outside air and the air entering the room in the warm air inlet.

I would like to know your method of determining the amount of indirect radiation required in a room 40x40 ft. also the required size of wall and air inlet to maintain the proper velocity, also the size of vent duct and the size of aspirating coil necessary to remove stale air. The screen of outlet duct is about 40 ft. in the roof of the building.

Massachusetts. E. W. A.

The Massachusetts law governing the ventilation of school buildings requires that 1,800 cu. ft. of fresh air per pupil per hour shall be supplied. This is at the rate of 30 cu. ft. per minute. The law also requires that the vitiated air shall be removed, through the vent ducts in amount equal to the volume of fresh air supplied. These requirements are stated somewhat differently by correspondent who evidently has made an error in using the word *second* where the *minute* was intended. In designing school buildings it is usual to allow from 12 to 15 sq. ft. of floor space per pupil, various states differing in their requirements. Allowing 12 sq. ft. of floor space per pupil, according to our understanding of the law, would require 30 cu. ft. of fresh air per minute for each 12 sq. ft. of space or 15 cu. ft. for each 6 sq. ft.

We might say that it is hardly possible to adequately discuss this subject in a brief article or answer to the inquiry. The quantity of air required to conform with the law, its conditioning, and the size of radiators, ducts, and registers, depends upon so many conditions that an extended discussion with formulas and examples should be given to cover the subject.

A school room 40x40 ft. in size has 1,600 sq. ft. of floor area and is rather an unusual size, except that it is used as an assembly room. The dimensions of an average school room, or we might say a school room of standard size, is about 24x30 or 32 ft., according to ceiling height, and is designed to accommodate from 45 to 50 pupils. For a room having 1,600 sq. ft. of floor space, considering that 15 cu. ft. of air per minute is required or desired for each 6 sq. ft. of space as stated, we should determine the requirements as follows: $1,600 \div 6 = 266\frac{2}{3}$. $266\frac{2}{3} \times 15 = 4,000$, the cu. ft. of air per minute. The hourly supply is $4,000 \times 60$ or 240,000 cu. ft.

As no mention is made in the inquiry regarding the heating of the room we assume that sufficient direct radiation will be provided to compensate for the heat loss through windows, exposed walls, and leakage. The indirect radiation is required only for tempering the air necessary for ventilation.

The velocity through a flue supplying a first floor room is low, probably not over 250 ft. per minute. The area of the flue can be determined by dividing the amount of fresh air required per hour by 60 times the velocity per minute. $240,000 \div (60 \times 250) = 16$ sq. ft. of flue area required.

The velocity of 325 ft. per minute, as mentioned in the communication, is about the rate that would be expected in a flue leading to a second floor register.

The amount of indirect radiation required depends upon the efficiency of the surface in the radiator. The spacing of the sections, character of the surface, the temperature and velocity of the fresh air supply, all affect the efficiency of the radiator. The amount of surface required may be determined by considering that the volume of fresh air to be supplied is entering the radiator at zero and is to be warmed to the room temperature of 70 degrees. We know that 1 B. t. u. will raise the temperature of 55 cu. ft. of air 1 degree, therefore 240,000 cu. ft. of air to be raised 70 degrees equals 16,800,000 cu. ft. to be raised 1 degree. If we space the radiator sections of the indirect radiator so that with a velocity of 250 ft. of the air supply each sq. ft. will give off 400 B. t. u., we may assume that each sq. ft. will heat 22,000 cu. ft. of air 1 degree. $16,000,000 \div 22,000 = 764$, the sq. ft. of indirect radiation required. This is at the rate of about 50 sq. ft. of radiation per sq. ft. of flue area. This might be increased to 60 or 65 sq. ft. per sq. ft. of flue area and a smaller flue might then be used.

With the number of pupils a room is to accommodate known, it is better to estimate on a requirement of 1,800 cu. ft. of fresh air per pupil per hour. For example, considering a standard size of school room, 24x30 or 24x32 ft., calculated to accommodate 45 pupils, this room would require about 81,000 cu. ft. of air per hour and on the basis of figuring used above, about 260 sq. ft. on radiation would be required to temper the air from zero to 70 degrees and a flue about 24x30 inches (5 sq. ft.) would be used. For good effective heating and ventilating a room 40x40 ft. should have two flues for fresh air and two flues for foul air.

There are so many conditions governing this class of heating or ventilating that it is almost impossible to formulate a table for reference, or suggest formulas for figuring, that will cover every requirement. The temperature of the hot air in the flue depends upon the temperature of the cold air supply, the velocity through the radiator, the temperature of the heating medium (steam or water), the spacing of the radiator sections and character of the surface. Theoretical velocities of air in flues, due to natural and accelerated draft, were determined and assembled in tabular form by Prof. Carpenter, but *actual* velocities seldom exceed one-third of the amounts given in these tables. The late Dean John R. Allen compiled several tables showing the rate of heat transmission from standard indirect radiators; also of final temperatures, but certain conditions qualify the findings expressed in these tables.

(Continued on Page 134.)

# GETTING NEW BUSINESS *from* NEW HOME OWNERS

*It is Timely for the Plumbing and Heating Contractor to Get Acquainted—A Good Mailing List, Circularized Monthly, Will Suggest New Equipment for the Home—The Cost is Small and Persistent Effort Will Be Rewarded Now and for Years to Come*

*By* Robert Falconer

THERE recently appeared in the newspapers the statement that today there are 6,000,000 families living in their own homes. High rents and the difficulty of finding any house to live, without purchasing one, has driven many families to owning their homes. As long as the house shortage continues, there is reason to believe that this process will continue.

Plumbers can make this condition of affairs work to their advantage. When a person owns a house he keeps fixing it up. It is his own home and he keeps making it a better place in which to live.

**Home Owners Always Planning Improvement.**

Some of these new home owners are delaying improvements because they are already taxed with the payments that they have to make on the houses. The plumbing needs attention, the house needs paint, there are other things that should be done, but those payments are taking all of the income.

Those payments, however, are enforcing habits of thrift. Many a person, who is making just as large monthly, quarterly or semi-annual payments on his house as he can afford, is going to form the habit, is in fact forming the habit of setting aside a certain sum of each pay. He will continue to do that until that house is fixed up to his satisfaction. In the course of a few years he is going to have money he can spend with the plumber. In the meantime, he is making plans. He is getting ready for those new plumbing fixtures, that new bath room, a more attractive laundry, etc.

Some of the new house owners have the money to spend, but are putting off the new work done until prices come down. They have an idea that they are coming down now but they don't know that they have, in certain instances, taken a very decided drop. Generally speaking, they do not know that bathtubs and boilers, for example, have receded far from their high points. If they did know, there is reason to believe that they would no longer put off buying what they need, but which they are getting along without until prices come down. The plumber must tell the public the facts in regard to price reductions.

**The Salesman's Opportunity.**

In every city of any size there is business among these new house owners that is just waiting for the plumber to come and get it. A lot of these people have bought and are living in houses they would not live in, if they did not own them, and plan to fix them up. They are merely waiting until the prices are right or some plumber actually sells them the idea of having the work done at once.

If some plumber does not sell them this idea, the chances are that they will have no more done than is absolutely necessary for sometime to come. The plumber who does sell them the idea is pretty sure to get the business.

The real estate owner who has had considerable holdings for some time either has formed plumbing connections already or gives his work out on bids that often leave little, if any, margin of profit. These owners also are not likely to have any more plumbing done than is absolutely necessary. Their holdings are a source of income and the lower they can keep expenses, the larger will be this income.

**Satisfaction Important to Home Owner.**

In the case of the new home owners, they have formed no plumbing connections. One plumber has just as much chance of getting their business as another. These people are going to have the work done that will make their homes suit them better. The matter of expense is not such a great factor with them as the matter of satisfaction. They are open to suggestions that will make the home plumbing more up-to-date. They are willing to spend more money if they can be shown that additional expense will add to the attractiveness of the home.

This certainly is a mighty good field to cultivate, yet on the whole it is not being cultivated with the intensity that it might. There are a lot of new bath tubs needed, new shower baths, new kitchen sinks and all kinds of fixtures. Yet there are a lot of house owners who have little idea what these would cost. If they had the prices today, the chances are they would go ahead and have the work done. They haven't interest enough to go to the plumber and make inquiries.

**Put Home Owners on Your Waiting List.**

If some plumber had these people on his mailing list, and each time he received a new lot of literature from the manufacturer, he mailed each prospect a booklet, it would pave the way for sales. As it is, they read the advertisements in their weekly or monthly magazines but have only a vague idea of the cost. They know of a lot of good things that they need but are inclined to think that they cost too much to buy now.

Send these same people a little booklet on water heaters this month, one on kitchen sinks next month, one the next month on the laundry plumbing and fixtures, and follow this up with a booklet on bath room fixtures. Let these people get something from you each month. State the prices at which you sell these fixtures. Inform them in regard to the comparatively low cost of pipe and fittings that will be needed. Keep this up for a little while and a number of these people are going to ask for a price on a job and have that job done.

Some of these jobs will, of course, be small. Others will run up into quite satisfactory amounts. There are a lot of people that are going to add another bathroom. There are

others who are going to have entirely new plumbing and fixtures. If only one $50 job could be done in each of the six million homes, the total would be three hundred million dollars. There is enough work of this sort in every community to create a really worth while business for any and every plumber.

**Mailing Cost Is Low.**

It does not cost very much to keep these people informed. The literature received free from the manufacturers and a monthly mimeographed letter or circular will do the trick. The list of names and addresses can be secured by reference to the record of deeds in the city hall, etc.

Some of the customers secured in this way may prove to be really worth while. No one can tell how much other property they may acquire or how many plumbing contracts will not be let in the near future, until they pass upon the plumber.

It, is, however, the immediate business that can be secured that counts for most. Even if there is little building going on, even if times are hard, there are a lot of these new home owners who are in a position to have work done.

Those hot water heating booklets, bathroom fixture booklets and all other literature that the plumber may have stored away in one corner of the office, or which he could easily get from the manufacturer or jobber, won't do any good where they are. Place them in envelopes, put a stamp on the envelopes, address and entrust them to Uncle Sam, and a lot of them will get returns.

Mail the booklets today, and keep mailing them during the months to come. It will help to land immediate business, and years from now some one in that list is going to come in, to have work done. These booklets have helped them to make their plans. They have suggested new things. They have constantly increased the desire for more and better fixtures. The final contract may be hundreds of dollars larger than it would have been, if a few dollars had not been spent in mailing reading matter to that home owner.

## THE FUTURE OF OIL AS FUEL IN GREAT BRITAIN.

One of the effects of the coal famine in England has been to fix attention on the possibilities of liquid fuel. Engineers throughout Great Britain who specialize in burners and other appliances for oil firing are receiving a large number of inquiries. So far as metallurgical furnaces are concerned, however, there is no disposition to enter on new departures, while the present stagnation of trade continues, but it is evident that many manufacturers are contemplating the substitution of liquid for a solid fuel in their furnace practices, reports United States Trade Commissioner Wilbur J. Page, of London, England.

Possibilities of steam raising by means of oil installations are being looked into as of more immediate concern than anything else. One Birmingham firm is giving a striking demonstration of the possibilities of oil fuel. At its Coventry Road engineering works a boiler of multi-tubular type has been converted from solid to liquid fuel, the fitting and adaptation being successfully completed in the course of a week end. From this source electric current is obtained for the operation of the machine shops, and the change thus obviated the interruption that would otherwise have resulted through the curtailment of the municipal electricity supply, from which this plant formerly drew its power.

Just how extensive has been the conversion from solid to liquid fuel because of the coal strike would be hard to say. The conversion in most cases has been decided upon almost overnight, and it is impossible to get any definite statistics so far regarding its extent. Another factor that has been largely responsible for the quick conversion from solid fuel to oil in steam raising during the present crisis has been the extreme simplicity and inexpensiveness of the changes involved. All that is required is a burner, oil tank and strainer, with the necessary steam connections and oil valves. These can be purchased now for £50 and upward, according to the type of installation. A blower for starting up, which is not generally required foir boiler conversion, costs £27 to £28.

**The World's Resources of Coal.**

To forecast with any degree of accuracy the future of oil fuel for industrial purposes in Great Britain, it is necessary to consider the relative world supplies of coal and oil, their relative economy in practice, and their relative efficiency. In normal times the world's approximate consumption of coal amounts to 1,200,000,000 tons, of which total Great Britain normally produces about 275,000,000 tons. The normal domestic and industrial consumption of coal per year in Great Britain is 190,000,000 tons; the rest of Great Britain's production is exported.

On the basis of expert figures that four and one-quarter barrels of oil fuel are equal to one ton of coal, the world must produce 5,100,000,000 barrels of oil per year in order to replace coal fuel with oil throughout the world. The present production of oil in the world is only 550,000,000 barrels. So that the world's present output of oil is only sufficient to replace about 11 per cent of the coal. In other words, if all the oil produced in the world were shipped to Great Britain, it would be insufficient to replace the coal consumed in Great Britain for all purposes.

**British Coal Supplies—Expansion in Use of Oil.**

It has been estimated that the known available coal fields of the world insure an adequate supply for the normal needs of the world for the next 4,000 years. This, of course, does not take into consideration the possibilities of the discovery of vast new fields which undoubtedly exist. While Great Britain's visible coal resources constitute only approximately 3½ per cent of the total coal resources of the world, it is estimated that with proper care and economy in working Great Britain's coal should be sufficient for its requirements for the next 500 years.

As for oil, there is absolutely no certainty as to available supplies. Undoubtedly large reservoirs of oil exist in the world which have not yet been discovered, but no estimate can be made in any field as to the period of exhaustion for that field. Already the navies of the world go far toward consuming at least a third of the oil produced in the world. In addition to this the conversion and the construction of oil-burning ships in the mercantile marines of the various maritime nations has led to a further consumption of oil as fuel. Thus the expansion in the use of fuel oil is bidding fair to rapidly outstrip its present production.

**Relative Efficiency of the Two Fuels.**

Turning from oil to coal, an average ton of British coal is supposed to have a heating value of 12,000 B. t. u. per pound, and the average price may be taken as £2 per ton. Basing the price of oil at £6 per ton and the heating value of oil at 18,000 B. t. u. per pound, we find that oil as fuel costs twice as much as coal.

In view of the uncertainty of the world's future supply of oil and the great question as to whether, granting all the possible advantages in the use of oil as a fuel, in most cases real practical economy can be effected, there is room for doubt that the boom in the use of oil as fuel will reach the proportions during future generations sometimes predicted for it. Unquestionably the world has squandered its coal resources in the past, and this waste is still continuing. It is estimated that in Great Britain alone the domestic and industrial consumption of coal could be reduced at least 50,000 tons per year by adopting more economical methods. This saving would represent 200,000,000 barrels of oil per year, an amount equal to the oil production of all the countries of the world, excluding the United States.

# NEW YORK CITY'S FIRST MUNICIPAL STREET SHOWER BATHS

*First of Twelve Hundred Street Shower Baths Put in Operation in New York, Attracting Much Attention and Comment —Psychological Influence Expected to be Country-Wide*

THE first of the municipal street shower baths, 1,200 of which are eventually to be installed in various parts of New York for the benefit of the children of the poor, went into operation this week, and was received with enthusiasm by more than one hundred delighted youngsters, residents of the city block on West Forty-seventh Street, between Eighth and Ninth Avenues.

Several master plumbers, located in the neighborhood, mingled with the sidewalk crowds which watched the children enjoying their first municipal street bath, and they studied with professional interest the novel device employed for the purpose, which is the invention of Chief Kenlon, head of New York's fire department.

The apparatus consists of four tall, uright stanchions, with firm standards at the bottom. From each stanchion, at right angles, at the top, protrudes a long arm to which is attached a large sprinkler, which is supplied with water from the street main through the medium of a 2½-inch hose. The srinklers cover a radius of 26 ft., and as the stanchions were set four or five yards apart, the whole street was soon a miniature seashore resort, the spray from the showers extending even to the stoops of the neighboring houses, and the water standing more than two inches deep in the roadway.

All street traffic was, of course, shut off from the block while the showers were in operation, as will be the case at all other points throughout the metropolis, at which the portable showers are to be installed.

Mayor Hylan and several other prominent city officials attended the opening session of this municipal activity, and His Honor, standing on the top step of the stoop of one of the houses in the neighborhood, made a speech in which he declared that he was going to "bring the ocean" to the people in the congested districts of New York who could not afford to take their children to the seashore.

Fire Chief Kenlon was among the city officials present, and Captain Jacob Seyfarth, of Engine House 54, which is in the block where the showers were installed, acted as official master of ceremonies. Firemen from the engine house assisted Captain Seyfarth in seeing that the youthful bathers had a thoroughly good time, and the Fire Department's band contributed to the festivities by playing popular airs.

Since this first municipal street shower bath was formally opened on the West 47th Street block several others have been installed in the Bronx, Brooklyn, and other parts of Greater New York, and are now in operation every day of the week. The Mayor has announced that it is only a question of a week or so before the entire 1,200 showers will be in operation.

No matter what their politics, or how they regard the other acts of the present municipal administration, master plumbers of Greater New York have good reason for giving three cheers for Mayor Hylan for introducing this novel feature, for, quite apart from its philanthropic aspect, it is bound to prove a mighty good thing, in the long run, for the local plumbing industry. While these street shower baths are intended for the children of the poor, it is not unreasonable to expect that their operation is going to have a psychological effect on many people in better circumstances which will result in a substantial increase in the demand for installations of private shower baths in houses and apartments.

Thousands of men and women in comfortable circumstances will watch these little street urchins enjoying the delights of the municipal showers, and seeing the enjoyment and benefit the youngsters get out of them, the thought will come to them that their own little ones would get an equal amount of fun and benefit out of a shower bath installed in their homes. In fact, not only will they have their own children in mind, in this respect, but they will probably give thought to their own comfort, too. Several well-dressed men, watching the children enjoying their first municipal shower bath, on the West 47th Street block, were heard to say that they had all they could do to resist the temptation to peel off their clothes and join in the fun. It was a sweltering hot day, and the "power of suggestion" was so strong that it is a safe bet that as soon as these envious adults arrived home they lost no time in getting under the shower in the bathroom—if they were fortunate enough to possess this convenience. And if they were not so blessed, it is an equally safe bet that they were ripe prospects for any master plumber who happened to come along at that psychological moment with an offer to install a modern shower bath on the premises.

Nor will these municipal showers exert a psychological influence, in this direction, only on that proportion of New York's population which actually sees them in operation. All the newspapers printed spread-head stories describing the cool comfort the youngsters got out of the street baths while the rest of the city sweltered, and the motion pictures, news concerns were prompt in filming the event, so that the "power of suggestion" will be brought home to millions. Thus Mayor Hylan's street showers constitute a mighty valuable bit of free publicity for the plumbing industry. They can be counted on to help considerably in stimulating the demand for shower bath installations.

Enterprising master plumbers, in fact, might find it profitable to get out a special circular, addressed to the home-owners in their neighborhood, calling attention to the great benefits the poor children of the city are getting out of the municipal street shower baths, and asking the question whether the "poor, little rich child" ought to be deprived of similar advantages. A cleverly worded circular, along these lines, quoting from the newspaper accounts of the proceedings on West 47 Street, between Eight and Ninth Avenues—one of the poorest sections of New York City and ending up with the argument: "Wouldn't *your* youngster have liked to be there? Why not give him the same fun and benefit by installing a shower in your bathroom?" would probably strike a responsive chord which would result in business.

# News of the Associations

### Southern Wisconsin Master Plumbers' Benevolent and Sanitary Club Holds Annual Outing.

Lake Koshkonong, Jefferson County, Wis., on the banks of which Indian tribes of former days assembled and smoked their pipes of peace following a scalping escapade, was the scene of the annual outing of the Southern Wisconsin Master Plumbers' Benevolent and Sanitary Club on Saturday, July 9th.

The club is composed of master plumbers of some twenty towns and a good representation from most of the towns turned out to enjoy the day.

The members were intent on giving the women folks a day of rest and freedom, and they tabooed the basket-lunch idea. In its stead, those attending, which numbered more than eighty, had their lunch served in the Hoard Hotel, an elegant summer resort hotel erected by Ex-Governor Hoard. Everybody present made the trip by automobile, and it was well toward noon when the last machine arrived on the scene. The home coming spirit prevailed, and many a happy reminiscence was told as the men and women gathered in small groups under the shady trees awaiting the always welcome call from the dining room. Following an excellent repast, President Fred E. Green, of Janesville, called the members together for a short business session. While business was being transacted, some benevolent sanitarian with enough real ideas to write a constitution for the League of Nations, announced solemnly enough that soft beverages were on tap at the grand stand, and all those wishing to be refreshed make their appearance.

The women folks also enjoyed the occasion, while the refreshment stand in the hotel was also at their disposal.

Everybody voted the outing a grand success and it was well toward nine o'clock when the last automobile had its engine turned and was on its way back home with a load of gay picnickers.

H. R. Williams, Minneapolis, manager of the Fort Wayne Engineering & Mfg. Co., Fort Wayne, Ind., and H. C. Horstmeyer, southern Wisconsin representative of the company, were in attendance and presented the ladies with souvenirs of the occasion.

### Maine Master Plumbers Arrange for Twelfth Annual Outing.

The twelfth annual outing of the Master Plumbers' Association of the State of Maine will be held Monday, August 8th, at Cushings', Long Island, Me. One of Cushings' famous clam bakes, which includes lobster stew, crackers, pickles, fried clams, New England clam bake, lobsters, eggs, sweet potatoes, green corn, white bread, pilot bread, ice cream and cake and coffee will be served. A great program of sports has also been arranged, and everyone attending is assured a good time. The committee in charge of the outing consists of Chris. Madsen, Frank Davis and P. A. Mahoney, of Portland, Me.

### President J. B. Richardson of Atlanta, Ga., Appoints Committees.

J. B. Richardson, newly elected president of the Domestic Engineers of Atlanta, Ga., has recently appointed the following to serve on the various committees of the association, and in doing so he has attempted to place every member in association activity:

Finance: M. E. Ford, R. E. Wynn, T. R. Stephenson.

City Hall: C. J. Warner, C. W. Baxter, D. T. Beggs.

Sanitary: B. W. Boatenreiter, W. R. McGrath, W. J. Mitchell.

Labor: Board of Directors of Engineers.

Membership: D. A. Farrell, D. N. Landers, S. S. Shepard.

Publicity: J. E. Belcher, G. W. Payne, J. J. Hill Jr.

Educational: W. S. Loftis, T. R. Stephenson, R. E. Wynn.

Resolutions and Amendments: D. A. Farrell, Wm. A. Manning, D. N. Landers.

Material: L. F. McDonald, D. A. Farrell, J. G. Englehardt.

Heating: J. G. Englehardt, Wm. A. Manning, D. T. Beggs.

The president is ex-officio member of each committee.

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Massillon, O.—The Ames & Bullach Plumbing and Heating Co. has been incorporated with a capital of $25,000, by Orrin F. Ames and Wilson G. Bullach.

**The Johnstown Delegation at Pennsylvania Master Plumbers' Recent Convention in Allentown, Pa.—From "Domestic Engineering" Photo.**

# Obituary

### George W. Moody.

George W. Moody, for more than forty years a member of the plumbing and heating firm of O. M. & D. W. Nash, of Portland, Me., died June 28th at his summer home on Great Diamond Island, in Portland Harbor, Me. Mr. Moody retired from active business in 1909 and has since devoted his time to his garden and his books. He was a life-long resident of Portland and had a host of friends.

### George M. Ramsden.

George M. Ramsden, in charge of the sales department of the plumbing and heating business of the Edward Joy Co., Syracuse, N. Y., was drowned in the Jamesville reservoir last week while attending a bathing party. Mr. Ramsden was one of his firm's faithful and best employes, and the news of his untimely death came as a great shock. He was in his thirty-first year. A young son, his parents and two brothers survive him. His wife died some time ago.

### Edward R. Hitchcock.

Edward R. Hitchcock, a master plumber of De Kalb, Ill., died at his home in that city on Saturday, June 18th, after three days' illness. He was one of De Kalb's best known men and was regarded by his business associates in that city as a "prince among men." He was born in Morris, Ill., March 28, 1874, and worked in the plumbing business in that city with his father, B. C. Hitchcock, until about 1904, when he went to Aurora Ill. coming to De Kalb in 1909. Mr. Hitchcock was a member of the De Kalb Master Plumbers' Association, the Modern Woodmen, the Masons, the White Shrine and the Odd Fellows He is survived by his wife, three daughters, his mother and father, and a brother and sister.

# How *an* Ohio Jobber Cashes *in on* Trade Paper Ads

*Advertisements of Lines Handled Thoroughly Discussed at Weekly Salesmen's Meeting and Used to Build Bigger Business*

*By* The Research Man

Mr. Plumbing and Heating Contractor, do the advertisements in your trade paper mean only that someone is trying to sell you something? In that case you and the advertiser both lose, and the money, brains, and time spent in producing it and presenting it to you is largely wasted. The fact that it is the advertiser's money and efforts that are being wasted may cause you to feel that it is no concern of yours, but this is not a very sound idea, for whatever waste of money or effort that occurs in any branch of the industry with which you are connected must either directly or indirectly affect you. The more efficiently goods can be manufactured, sold and installed, the better for everyone in that field.

### Ads Help to Sell Goods.

Do any of the advertisements interest you? Why? If any of those advertisements interest you, then why isn't it logical to assume that they would also interest a great many other people, including prospective customers? When you come to an advertisement that arrests your attention, analyze it to find out just why it impressed you. A careful study of the advertisements in your trade papers should give you some very valuable ideas that will be of considerable help to you in selling those goods to your customers. Some advertisements are chiefly descriptive, pointing out and explaining in detail the chief characteristics of an article. These characteristics are the talking points to use in selling that article to your customer. Other advertisements give a list of specific reasons why you should use a certain pump, compound, heater, fixture, or whatever it might be. These same facts should be pointed out to the prospective buyer, for they are usually so worded and arranged as to best present the merits of that particular product. Advertisements describe processes of manufacture, tests, standards, etc., that are effective selling arguments. They often show how to display goods most effectively and explain just how these goods can be used to the greatest advantage in specific instances.

### Keeping Up With New Equipment.

Advertisements also show the most recent developments in the various lines and indicate how these things may be used to meet special requirements. Of course, the contractor will find, in his trade paper, advertisements of goods that are for his own use and not to be resold to his customers, including various kinds of tools and equipment, but even from advertisements of tools that he is already using he can frequently get ideas on how to get the best results and how best to care for them. Every now and then he will see advertised certain things that are just being put on the market or that he did not before know were in existence. Then, too, the contractor who handles well advertised goods is more certain to get the greatest co-operation of his manufacturers and jobbers.

A short time ago the head of a prominent plumbing and heating supply company in Ohio, in discussing the merchandising of plumbing and heating goods, said:

"I had been connected with a number of different lines of business before I got into this one, but never before have I been in a business where there has been so little real selling. For a long time it seems that there was practically no plumbing or heating contractor who saw the importance of modern methods of merchandising. They either could not or would not make any real efforts to develop the selling end of the business. Various factors have been at work during the past few years which has changed this condition to some extent, but quite a few of the contractors are still far behind the times in the development of their merchandising possibilities.

### Trade Paper Ads Basis of Sales Talk.

"The first of this year we started the practice of calling in our salesman once a week for sales talks. We use the advertisements in our trade papers of the goods we sell as a basis for developing sales arguments. It is, of course, much easier to sell the contractor the goods that are advertised in the trade papers, for the contractor knows something about them before we get to him, but it is a still greater help in getting him to sell more of that class of goods. Our salesmen point out the arguments to him and show him how to make the most out of them when he in turn wants to sell them to his customers. Many of them have not always done this, but quite a number of them now see the advantage of studying the advertisements in order to get the main selling arguments and often the most effective ways of displaying them, for very often these things are very clearly outlined and prove very valuable in making the sale to the consumer.

### Ads Helpful in Times of Depression.

"In our meetings with the salesmen every week, all these arguments and descriptions are gone into very thoroughly, and we have found them very effective in this time of depression when we need every selling argument we possibly can get. It would pay every contractor to study carefully the advertising pages of his trade papers in order to develop his selling ability, for that is very much needed in this industry. I am convinced that if the contractors would put on one salesman each and follow a sound merchandising policy they would more than double their business, and those who do not care to take this step can increase their sales considerably by studying the advertisements and making use of the arguments presented and the suggestions given for display and demonstration."

# AMONG THE WHOLESALERS AND MANVFACTVRERS

## COMPANIES RECENTLY INCORPORATED.

The Phil-King Sanitary Cooler Co., Pottstown, Pa., has been incorporated with a capital of $100,000, to manufacture water coolers, filters, and other sanitary equipment. The incorporators are Jacob E. and J. Roy Kinckiner and Frank A. Phillippi, Pottstown, Pa.

The Acme Boiler Works, Inc., Detroit, has been incorporated with a capital of $25,000, to manufacture boilers, tanks, etc. The incorporators are Charles L. Simmons and Samuel A. Reigel.

## WOLFF MFG. CO. OPENS BRANCH IN CINCINNATI.

Wolff Mfg. Co., Chicago, has opened a branch in Cincinnati, Ohio, to be known as the Wolff Company of Cincinnati. Offices have been established at 201 Walnut Street, with C. P. Darroch as manager. The territory to be served by this branch will include the southern sections of Indiana and Ohio, and the northern sections of Kentucky and West Virginia.

## WALWORTH MFG. CO.'S GENERAL OFFICES IN NEW LOCATION.

The Walworth Mfg. Co., of Boston, Mass., has moved its general offices from the factory at First and O Streets to Pearl and High Streets, in that city. The new location comprises an entire block on High Street, and the general offices of the company will occupy two floors where the officers' offices will be located as well as those of the accounting force, the branch house department, the purchasing department and the sales promotion department.

## EUGENE BUEHLER CALLED BY DEATH.

Following an illness of several months, Eugene Buehler, secretary and treasurer of the Davies Supply Co., Chicago, died in a sanitarium at Battle Creek, Mich., on Wednesday, July 13th. Mr. Buehler was well known in the trade and gained greater popularity as a member of the Western Trade Golf Association. He was also active in Masonic affairs, being a member of Metropolitan Lodge No. 860, A. F. & A. M.; Oak Park Chapter, R. A. M.; Siloam Commandery, K. T.; Oriental Consistory, and Medinah Temple. The funeral took place from his late residence, 530 North East Avenue, Oak Park, Ill., Friday, July 15th, and interment at Forest Home Cemetery the final rites being attended by a large number of friends in the trade and a delegation from the Western Trade Golf Association. Mr. Buehler is survived by his widow and three children.

## NOW IN NEW LOCATIONS.

The Tirrill Gas Machine Lighting Co., New York City, has moved its offices and sales room from 103 Park Avenue to the Hudson Terminal Building, 50 Church Street.

The Hercules Chemical Co., New York City, has moved its offices and sales department to 59 Crosby Street, in that city.

The Ohio Pipe Bending & Machine Co., Cleveland, has moved to 2010-20 Elm Street, in that city.

The Parker-McNulty Co., Milwaukee, Wis., has moved its offices from 410 Jefferson Street to 814 Winnebago Street in that city.

## PLUMBING AND HEATING EXHIBITS AT HOTEL MEN'S CONVENTION IN CHICAGO.

Thousands of hotel men came to Chicago this week to attend the convention of the American Hotel Association, which includes such organizations as the Hotel Men's Mutual Benefit Association, the Great Lakes Hotel Association, the American Caterers' Association, the International Stewards' Association, the American Association of Dining Car Superintendents, the Illinois Hotel Association, the Chicago Hotel Association and the Greeters of America. Simultaneously with these conventions an exposition of hotel and restaurant equipment was held at the Coliseum, where more than two acres of exhibits were housed. These exhibits gave the many hotel men and visitors an opportunity to take a post-graduate course in hotel equipment, furnishing and operation. Hotel plumbing equipment was exhibited by Crane Co., of Chicago, which showed a 5½ to 7 ft. bath room completely equipped with a built-in tub, shower, pedestal lavatory and closet. The Wheeling Sanitary Mfg. Co., Wheeling, W. Va., the Chicago Faucet Co., Chicago, William Heap & Sons, Grand Haven, Mich., and the Art Metal Radiator Cover Co., Chicago, also had exhibits. The exhibit of the Wheeling Sanitary Mfg. Co. and the Chicago Faucet Co. were combined, and showed the Wheeling fixtures, which included a combination tub and foot bath, leg lavatory, and closet, fitted up with brass goods of the Chicago Faucet Co. A case of brass goods was also on display. William Heap & Sons showed five closet bowls fitted up with their light-weight seats, in different designs and colors. Neatly designed and well appointed metal radiator covers were displayed by the Art Metal Radiator Cover Co.

## BUILDING CONSTRUCTION DURING THE FIRST HALF OF THE YEAR.

Construction activity in June, according to figures published by the F. W. Dodge Co., was 6 per cent less than in May, although it was greater than in April. Contracts awarded during June in the twenty-seven Northeastern States of the country amounted to $227,711,000.

Those sections in which labor troubles have been most pronounced were the ones in which decreased building activity was evident. Furthermore, the latter half of June showed up more strongly than the first half. The two facts seem to indicate that the small decline in June was only a temporary setback.

Included in the June total were the following items: $75,-

175,000, or 33 per cent, for residential buildings; $52,967,000, or 23 per cent, for public works and utilities; $25,493,000, or 11 per cent, for business buildings; $23,441,000, or 10 per cent, for educational buildings, and $18,502,000, or 8 per cent, for industrial plants.

The first half of this year has shown up quite favorably in comparison with previous years. From January 1st, to July 1st, the total amount of contracts awarded has been $1,066,256,000. This figure is 9½ per cent greater than the average semi-annual total for the preceding five years.

Included in the total for the first six months of 1921 were the following items: $360,828,000, or 34 per cent, for residential buildings; $242,701,000, or 23 per cent, for public works and utilities; $144,488,000, or 13½ per cent, for business buildings; $104,194,000, or 10 per cent, for educational buildings, and $86,940,000, or 8 per cent, for industrial buildings.

Contemplated new work has been reported during the first six months of this year to the amount of two and a half billion dollars.

June was a month of price and wage adjustments. Pending these adjustments the public has maintained an attitude of hesitation about going ahead. There are certain advantages in building now, especially in those localities where wages have been substantially reduced.

A strong feeling of confidence is the principal element needed to encourage increased activity in the remaining summer months. While there is in evidence a tendency to hold up building operations till the fall, there is a good chance that July will be a month of somewhat greater activity than June.

In 1919 60 per cent of the year's total construction activity occurred in the second half of the year. Thus far this year activity has kept somewhat ahead of 1919. If it continues to do so, the remainder of this year should show 50 per cent more activity than the first half has shown. There are numerous indications that something like this may happen.

### New England.

In the New England States June building contracts amounted to $16,211,000, a decrease of 14 per cent from the May figure. The June total included $7,004,000, or 43 per cent, for residential buildings.

Total construction contracts in this district during the first half of 1921 have amounted to $81,419,000, which is 24 per cent less than the average half-yearly total for the preceding five years.

Included in the total for the first six months of this year were: $30,985,000, or 38 per cent, for residental buildings; $15,186,000, or 18½ per cent, for business buildings; $9,790,000, or 12 per cent, for public works and utilities, and $9,388,000, or 11½ per cent, for industrial buildings.

During the first half of 1921 contemplated new work in New England has been reported to the amount of $210,527,000, which is over two and a half times the amount of contracts awarded in the same period.

### New York State and Northern New Jersey.

Contracts awarded during June in New York State and northern New Jersey amounted to $62,659,000, an increase of 8 per cent over the May figure. Of the June total 54 per cent, or $33,882,000, was for residential buildings.

Total construction contracts in this district during the first half of the year have amounted to $244,253,000, which is 35 per cent greater than the average total for the first half of the preceding five years.

The total for the first half of the year has included the following items: $135,083,000, or 55 per cent, for residental buildings; $34,525,000, or 9½ per cent, for business buildings; $23,019,000, or 9½ per cent, for public works and utilities, and $16,006,000, or 6½ per cent, for industrial buildings.

Contemplated new work has been reported for this district during the first half of the year to the amount of $682,554,000, which is more than two and a half times the volume of contracts awarded in the same period.

### Middle Atlantic States.

Contracts let during June in the Middle Atlantic States (comprising eastern Pennsylvania, southern New Jersey, Delaware, Maryland, District of Columbia, Virginia, North and South Carolina) amounted to $32,136,000, a decrease of 27 per cent from the May figure. The June total included $10,276,000, or 32 per cent, for public works and utilities, and $7,112,000, or 22 per cent, for residental buildings.

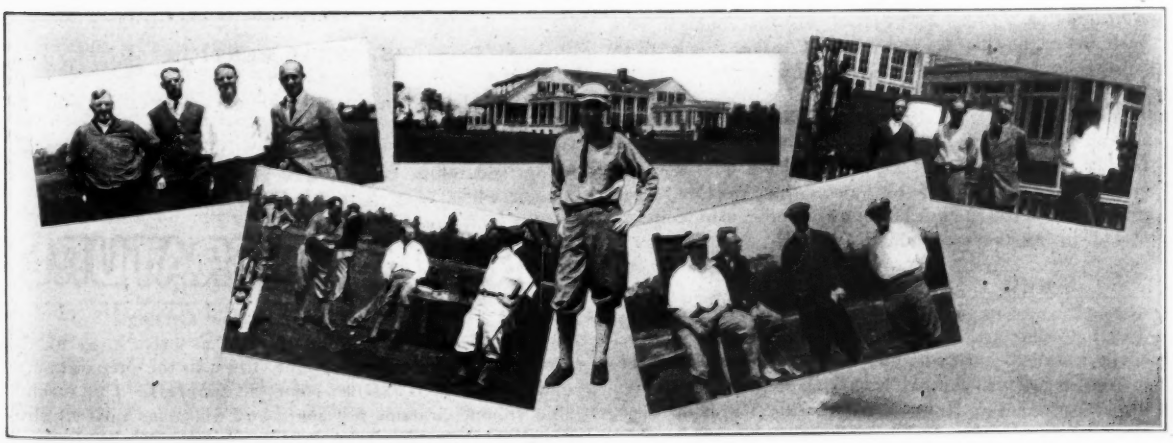
Total construction contracts let in this district during the first half of 1921 have amounted to $160,333,000, which is 2½ per cent greater than the average total for the first half of the preceding five years.

The total for the first six months of 1921 included: $56,308,000, or 35 per cent, for residental buildings; $39,513,000, or 25 per cent, for public works and utilities; $18,994,000, or 12 per cent, for business buildings, and $14,675,000, or 9 per cent, for industrial buildings.

During the first six months of 1921 contemplated new work has been reported in this district amounting to $400,000,000, about two and a half times the volume of contracts awarded.

### Pittsburgh District.

Contracts awarded during June in western Pennsylvania,



Snapshots taken at the recent Meet of the Eastern Trade Golf Association, Held at the Garden City Country Club, Long Island, N. Y.—Top Row, left to right, L. S. Rothwell, W. W. Bowers, F. W. Broatch, S. J. Cutting; The Garden City Country Club House; At the Score Board. Bottom, Ready to start the Ball Rolling; L. A. Kelly, C. B. Lane, G. E. Keenan, H. S. Maddock, and in the Center, J. B. Garfield, the "Chick" Evans of the Association.

West Virginia, Ohio, Kentucky and Tennessee, amounted to $47,225,000, which was an increase of 16 per cent over the May figure. The June total included $13,834,000, or 29 per cent, for public works and utilities; $9,936,000, or 21 per cent, for industrial buildings, and $9,640,000, or 20 per cent, for residential buildings.

Total of construction contracts let from January 1 to July 1, 1921, in this district has amounted to $215,568,000, which is 26 per cent greater than the average for the first half of the five years preceding 1921.

In the total for the first half of this year were included: $69,701,000, or 32 per cent, for public works and utilities; $57,845,000, or 27 per cent, for residental buildings; $22,308,000, or 10 per cent, for business buildings; $21,336,000, or 10 per cent, for educational buildings, and $20,037,000, or 9 per cent, for industrial buildings.

During the first half of this year contemplated new work has been reported for this district in the amount of $312,131,000.

### The Central West.

June building contracts in the Central West (comprising Illinois, Indiana, Iowa, Wisconsin, Michigan, Missouri and portions of eastern Kansas and Nebraska) amounted to $61,028,000, a decrease of 16 per cent from the May figure. Included in the June total were $17,132,000, or 28 per cent, for public works and utilities, and $15,378,000, or 25 per cent, for residential buildings.

Total contracts awarded in this district during the first half of this year have amounted to $325,929,000, which is 1 per cent greater than the average half-yearly total for the preceding five years.

Included in the total for the first six months of 1921 were the following items: $89,088,000, or 30 per cent, for public works and utilities; $71,287,000, or 22 per cent, for residental buildings; $50,739,000, or 15 per cent, for business buildings, and $46,500,000, or 14 per cent, for educational buildings.

During the first six months of 1921 contemplated new work has been reported in this district to the amount of $790,309,000, which is nearly two and a half times the amount of contracts awarded in the same period.

### The Northwest.

Contracts awarded during June in Minnesota and North and South Dakota amounted to $8,452,000, an increase of 12 per cent over the May figure. Of the June total, $3,311,000, or 39 per cent, was for public works and utilities, $2,159,000, or 25 per cent, for residential buildings.

During the first half of 1921 total building contracts in this district have amounted to $38,755,000, which is 23 per cent greater than the half-yearly average for the preceding five years.

Included in the total for the first half of this year were the following items: $11,293,000, or 29 per cent, for public works and utilities; $9,321,000, or 24 per cent, for residental buildings; $7,648,000, or 20 per cent, for educational buildings, and $2,735,000, or 7 per cent, for business buildings.

During the first half of 1921, contemplated new work has been reported in this district amounting to $114,942,000, which is about three times the total amount of contracts awarded during the same time.

## NEW CONSTRUCTION WORK.

The following are among the most important contracts recently awarded, as reported by the "American Contractor":

$100,000 school, Hutchinson, Kan.; Board of Education.

$100,000 warehouse, Huntington, W. Va.; The Bank Supply Co.

$100,000 sanitarium, Rockaway Park, L. I., N. Y.; Sanitarium for Hebrew Children.

$800,000 hotel, Bethlehem, Pa.; Bethlehem Hotel Realty Co.

$400,000 administration building and power house, Evansville; Evansville College.

$250,000 building, Terre Haute, Ind.; Wabash Realty Co.

$135,000 church, Detroit, Mich.; Bethel Evangelical Church.

$100,000 factory, Shamokin, Pa.; J. H. & C. K. Eagle, silk manufacturers.

$100,000 court house, Stockton, Kans.; Rooks County, Stockton, Kans.

$160,000 sub-station, New York City; New York Edison Co.

$175,000 out door school, Hartford, Conn. City of Hartford.

$150,000 church and Sunday school, Baltimore, Md. University Baptist Congregation.

$125,000 church, Columbus, O. Holy Name Roman Catholic Congregation.

$120,000 church, Akron, O. First United Brethren Church.

$120,000 gymnasium, Fulton, Mo. Westminster College.

$100,000 mill, Baltimore, Md. Jos. Thomas & Son.

$100,000 hospital, Cleveland, O. Lutheran Hospital.

$100,000 school, Iowa City, Ia. St. Patrick's Roman Catholic Congregation.

$100,000 school, Sesser, Ill. Board of Education.

$100,000 school, Garrett Park, Md. Georgetown University.

$100,000 school, Kalamazoo, Mich. Board of Education.

$100,000 school, Sunbury, Pa. Sunbury School District.

$350,000 hall, Chicago, Garfield Park Aerie No. 113.

$200,000 school, Jackson, Mich. Board of Education.

$100,000 church, Madison, Wis. First Evangelical Church.

$130,000 museum, New York City; New York Zoological Society.

$125,000 building, Springfield, Ill.; Franklin Insurance Co.

$102,000 school, auditorium and gymnasium, Detroit, Mich.; Board of Education.

$100,000 school, Norfolk, Va.; City of Norfolk.

$100,000 school, Hendricks, Minn.; Board of Education.

$100,000 building, Sheboygan, Wis.; Sheboygan Clinic Building Co.

$100,000 school, Indianapolis, Ind.; Daniel M. L. Voyles.

$100,000 library, Jersey City, N. J.; Board of Commissioners of Jersey City.

$1,200,000 bank and office building, Wichita, Kans.; First National Bank.

$500,000 residence, Portchester, N. Y.; Robert Law, Jr.

$220,000 building, Detroit, Mich.; The City of Detroit.

$100,000 dormitories, Johnstown, Pa.; Memorial Hospital.

$130,000 Bank Building, Royal Oak, Mich. The First State Bank.

## PERSONAL MENTION.

**Jay F. Martin** has recently joined the sales force of the Fort Wayne Engineering & Mfg. Co., Fort Wayne, Ind., and will cover the territory comprising southwestern Minnesota and South Dakota, traveling out of the Minneapolis branch, which is in charge of H. R. Williams.

# TRADE LITERATURE

### Kretschmer Mfg. Co.'s New Catalog.

A great deal of time and money has been spent by the Kretschmer Mfg. Co., Dubuque, Iowa, in the preparation of Catalog D, which has just come off the press. This formidable volume contains 670 pages and well over 2,000 illustrations, showing plumbing, heating, pump and mill supplies. It is bound in a stiff green cloth cover, and a 16-page index appears in the front of the catalog.

# THE METAL MARKET AND TRADE REPORTS

### Steel and Iron.

Early information regarding the last reductions in steel product prices by the steel corporation reached the trade last week when it was announced that the Jones & Laughlin Steel Company had reduced the price on wire and nails $5 a ton. This brought the base on nails to $2.75 per base keg and plain wire to 2.50 cents per pound. Independents were shading the old price of $3 on nails most of last week, one sale at $2.85 being reported mid-week involving a carload lot. Lower prices on wire rods are expected to develop, the nominal base of $48 having disappeared some time ago and even the $43 base has been shaky. The fact is the announced changes in wire and nails, made at the end of the week, was making the actual rather than the nominal base the quoting figure for these products.

In the change in prices of steel pipe, the reduction in addition to lowering the prices from $2 to $4 per ton, altered somewhat the base sizes, and the flat reduction in prices from one-fourth to one-half inch for but a $2 cut, and deeply slashing above seven-inch pipe to twelve-inch by reducing it $6 a ton, change the prices much more than would appear on the surface, and the larger cuts are in the sizes that are normally the most general. Taking it as a whole the reduction in pipe prices was the most interesting because of the fact that it affects the product making the best showing of all finished lines from the standpoint of demand and production.

The cut in skelp to a 2-cent basis has been an actuality for some ten days or more in independent steel circles. The demand, however, is not large and the market has nearly followed the tendency on plates and structural material.

Interest is centered in steel circles just now in the signs of life in the car building industry, in which a moderate amount of inquiry is now being handled by car builders and which will bring inquiries for plates and car material in the event of awards being made. The fact that 1,400 new cars were placed in June with builders is believed to be a turning point for a better showing in railroad buying. The semi-finished steel market last week was all but inert, due to the suspension of operations of many of the consuming plants in the sheet and tin plate industry. The demand for standard billets has been lifeless also. The new low price on billets, sheet bars and slabs have thus far failed to make any impression on the market and until the wage issue is settled in the two more important industries not much improvement can be looked for. In the meantime basic prices are not changed and a fair test of the new price can hardly be made.

The situation in the pig iron market is far from satisfying. The decline in production is keeping pace with lighter demand, but the statistical position keeps growing slowly but steadily stronger. The attitude of the consumers to the market is shown in the nature of their buying orders, which almost invariably specify immediate shipment. The complaints that follow when this explicit instruction is not complied with are frequent. The foundries have evidently decided with surprising unanimity to buy iron only as the orders come in for their finished product. They are plainly harboring their financial resources and prefer to take the risk of running out of iron completely rather than to commit themselves to deliveries or quantities when there is the least possibility that the material may not be needed in the near future ; hence their anxiety for immediate shipment.

Stocks in furnace yards, especially those which have been out of blast for some time, are certainly not accumulating and are growing to be rather badly assorted. With their operating forces cut down to the barest requirements, it is not always possible for them to reassemble at a moment's notice the force of men necessary to execute an order which calls for shipment immediately. Neither is it always easy for the buyer to secure on short notice the grades called for in his specifications. The same difficulty was experienced when every furnace in the country was turning out iron as fast as could be made, and it is here again where the reverse condition applies. Prices are uncertain as no one appears willing to quote unless on a firm order. Some exceptionally low prices have prevailed, and that iron has sold down to a $20 furnace base is persistently reported, though some of the larger selling agencies claim that many of the prices quoted can not be confirmed. Price for pig iron are quoted as follows:

| | |
|---|---|
| No. 2 Pittsburgh | $22.96 |
| No. 2X Philadelphia | 25.50@26.25 |
| No. 2 Southern, Birmingham | 21.00@21.56 |
| No. 2 Chicago | 20.00@21.00 |
| Basic Valley, furnace | 20.00@20.50 |
| Bessemer, Pittsburgh | 23.46@23.96 |

### Copper

The statistical position of copper has strengthened considerably during the second quarter, but with demand at low ebb producers are holding the market with difficulty. It is estimated by some authorities that the stocks during the last three months have declined about 60,000,000 pounds. The larger domestic consumers are apparently supplied at the moment. They claim that their light consumption has been a disappointment to them and that they had covered their requirements further than they had anticipated. Export demand, however, has loomed up to better proportions with France, Germany and Japan the principal buyers. More business on foreign account could have been done if the producers here would meet the buyers' views as to price. Copper for export at the end of last week was quoted at 12⅝ cents f. a. s., but sellers were reluctant to accept the price. For domestic consumption July copper is offered by the smaller agencies at 12¾ cents for July and 12⅞ cents to 13 cents for August-September, as to position. Some of the larger agencies, however, are holding out for 13 cents for later than July delivery.

### Tin.

The tin market from a consuming standpoint has been exceptionally quiet all of last week without seeming prospect of betterment. Some little business has been done on dealers' account, but the bulk of American trading has been in the London market, where the fluctuations have been unimportant. On Saturday, as usual in the absence of cables from London, the New York market was practically closed, with sellers asking 29 cents for Straits tin in all positions. Ar-

rivals during July have been 200 tons at Atlantic and 15 tons at Pacific ports. Tin afloat is estimated at 2,075 tons.

### Lead.

Lead has been holding up relatively better than the other non-ferrous metals, not because of any exceptional demand but because its statistical position is stronger and it is under more substantial control. The leading interest has been holding the market with an eye evidently on the foreign market and to discourage importations. The official price of the American Smelting & Refining Company has been fixed for some time at 4.40 cents New York and East St. Louis. The outside market is also quoted at 4.40 cents New York and 4.35 cents to 4.49 cents East St. Louis.

### Zinc.

With the exception of a little more interest in futures the zinc market is dull, even at exceptionally low prices. The producers, however, are not forcing business. Sellers ask 4.30 cents and 4.35 cents for East St. Louis delivery as to position. The Metal Exchange quotes New York at 4.65 cents, and basis East St. Louis at 4.30 cents for spot and July, against 4.45 cents asked, and 4.375 cents for August, against 4.45 cents asked.

### Other Metals.

Quotations on other metals in New York are as follows:

| | |
|---|---|
| Aluminum Powder | .61 cents per lb. |
| Aluminum (in 15-ton lots) 99% and purer | 28.50 cents per lb. |
| Antimony (Chinese and Japanese) | 4.75 cents per lb. |

### New York Old Metal Market.

The following prices are current for old metals:

| | Buying | Selling |
|---|---|---|
| Copper, heavy | 9½ to 9¾ cents | 10¾ cents |
| Copper, light | 8¼ to 8½ cents | 9½ cents |
| Brass, heavy | 4 to 4¼ cents | 5¼ cents |
| Brass, light | 4 to 4¼ cents | 5¼ cents |
| Lead, heavy | 3¾ to 4 cents | 4¼ cents |
| Tea lead | 2½ to 2¾ cents | 3¾ cents |
| Crucible copper | 10 to 10¼ cents | 11¼ cents |
| Solder joints | 5½ to 5¾ cents | 6¾ cents |

### Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

| | Buying | Selling |
|---|---|---|
| Heavy yellow brass | 5½ to 6 cents | 7 cents |
| Brass, light | 4½ to 4½ cents | 5½ cents |
| Red brass | 7¾ to 8 cents | 9 cents |
| Copper, heavy | 9 to 9¼ cents | 10¼ cents |
| Copper, light | 7½ to 8 cents | 9 cents |
| Lead, heavy | 3 to 3¼ cents | 4¼ cents |
| Zinc | 2½ to 2¾ cents | 3¾ cents |

### Copper Sales for June More Than Production.

Total sales of copper for June amounted to approximately 50,000,000 pounds and exceeded output for the same month by about 5,000,000 pounds. This compares with sales of 110,000,000 pounds in May and 75,000,000 pounds in April.

Cuts in steel prices have had no effect on the copper business, contrary to expectations, and a fractional decline in the price of brass goods has also failed to stimulate business in the copper industry, either domestic or foreign.

Germany's buying of the red metal has been small of late. Foreign inquiries are increasing, however, and copper authorities regard this as an indication of a good business in August. Japan is again in the market, but France and England are buying but little of the metal.

**British iron and steel exports** for June totaled 65,000 tons, compared with 149,000 tons in May and 283,000 tons in June, 1920. Shipments for first half of 1921 were 372,000 tons, against 1,655,000 tons in first half of 1920.

## STATEMENT OF AUSTRIAN IRON AND STEEL CONCERN FOR 1920.

The net profits of the Alpine Montan Gesellschaft, which comprises nearly all of the Austrian iron and steel industry, for 1920 were 28,564,704 crowns as compared with 10,697,928 crowns during the preceding year, according to a report received from C. H. Foster, with the American Mission, Vienna. The volume of annual sales for 1920 was 1,930,000,000 crowns against 246,000,000 crowns for 1919. On April 20, 1921, the company decided to pay on May 10 a dividend of 25 per cent, or 50 crowns, per share. Last year the dividend was 10 per cent, or 20 crowns, per share; in 1916 it was 50 crowns; and in 1912 it was 52 crowns per share.

The year seems to have been very prosperous, but the higher figures were really caused more by higher prices and depreciated currency than by a greater quantity of production and economy of operation. In general, production at the end of the year was about 22 per cent of capacity. In comparison with the company's best year—1916—iron ore was produced at the rate of 18 per cent; pig iron, 14.5 per cent; rolled iron, 27.5 per cent; and steel, 24.5 per cent.

## NEWS OF THE WORLD.

**The last census** gives the United States 6,448,366 farms, embracing 955,676,545 acres, having a value, including land and buildings, of $67,795,965,384. The average value of land and buildings is $10,514 per farm and the price per acre is $70.94. Illinois has 237,181 farms, containing in acres 31,977,513. The value of this property is $7,416,583,951 and this is more than double the value of the farm lands and buildings of Illinois in 1910. The average value of an Illinois farm including land and buildings is $31,270 and its value per acre is $231.93.

**The cost of running the United States government** during the fiscal year which ended last Friday was $5,115,927,689, according to the Treasury Department's statement for the close of business June 30. The figures, however, are subject to final adjustment. Revenues from all sources, although showing a drop of a billion under the previous year, amounted to $5,624,932,960. For the year ending June 30, 1920, the Government's income was $6,694,565,388, and its expenditures $6,403,343,841.

**Freight is now being received in Chicago over the all-water route** from New York. This freight arrives in from ten to twelve days. The shippers have the advantage of a 28-cent differential under rail rate. This freight is carried by lake steamers, owned by the Chicago Steamship Co., to Buffalo and then through the Erie Canal to the Hudson River. More steamers are ready to enter this service as soon as freight is offered. Within a short time it is expected that a lake and railway route to New York, via Buffalo, will be ready to accept shipments.

**Three additional courses** in boxing and crating are announced by the Forest Products Laboratory at Madison, Wis. These additional courses to be given July 25 to 30, September 26 to October 1, and November 7 to 12, are in response to the great interest industries all over the United States have shown in the practical plan of instruction developed by the government's experts in the laboratory. Those in charge of the work state that at the end of the ninth course in June, twenty-three industries in forty-two cities were represented, twelve firms were represented by two or more men, two firms had sent three men to the courses and one firm had sent four men. Enrollments are now being received for the courses above mentioned.

# *Letter Writing Contest Proving Valuable*

THE monthly letter-writing contest inaugurated last January by *Domestic Engineering* is one of the most interesting, as well as one of the most valuable, ideas put before the plumbing and heating profession. It is inspiring people to write who never thought they could put on paper the different ideas they have used to become better business men or more capable employes.

There is increasing evidence of the attention being given to these letters, and prize winners write us that they have received letters from interested readers of their contributions, asking special help on bookkeeping, advertising, collection letters, etc. In other words, the letter-writing contest is creating a better co-operative spirit in the industry that is far-reaching in its benefits.

This contest has several months to run, and YOU are eligible for the $30 prize money that is offered every month for the three best letters. The first prize is $15; second prize, $10; third prize, $5.

There are no strings tied to this contest. Plumbing and heating contractors, bookkeepers, journeymen, salesmen, sanitary engineers, etc., all are at liberty to write any kind of a letter they wish—long or short, and on any subject they choose.

We would like to hear from YOU! Sit down some noon or evening, when you have time to spare, and put on paper some helpful idea or experience that you believe will be of interest to the readers of *Domestic Engineering*. Don't worry about perfect English or other details. Just write. We will be happy to hear from you, and assure you that your letter will have every consideration.

Go to it today! Send your letter to the Editor, *Domestic Engineering*, 407 South Dearborn Street, Chicago.

# AMONG THE PLUMBING AND HEATING CONTRACTORS

## Illinois

### Chicago and Vicinity.

H. P. Reger & Co., 128 North La Salle Street, have the contract to install plumbing, heating and ventilating in the $300,000, four-story bank and office building, to be erected at the corner of Sixty-third and Woodlawn Avenue, for the Woodlawn Trust & Savings Bank.

The United Plumbing & Heating Co., 3012 West Roosevelt Road, and Max Raskin, 2409 West Division Street, have the heating and plumbing contracts, respectively, on the three-story $200,000, forty-two family flat building, to be erected at 1832-44 Humboldt Boulevard, for the E. & L. Construction Co.

Noble & Thumm, 2313 Lincoln Avenue, have the plumbing contract on the one-story, $50,000 store building, to be erected on Broadway near Thorndale Avenue, for Plotke & Crosby. The structure will contain eight stores and will be 55x130 ft.

P. Nacey Co., 927 South State Street, has been awarded the contract to install plumbing and heating systems in the four-story office and store building to be erected at 640-50 North Michigan Avenue for the Michigan & Erie Building Corporation. There will be six stores in the building.

### Other Cities in the State.

Hoe & Co., Christopher, have the plumbing and heating contract on the $100,000 high school building that is to be erected in Sesser, Ill.

F. W. Schlie, Decatur, has the contract to install plumbing in the county tuberculosis sanitarium that is to be erected in that city for the Macon County Tuberculosis Association. The structure will be two stories in height, and will cost approximately $90,000.

F. G. Davis & Co., Marion, have the contract to install plumbing and heating systems in the two-story side addition to the grade school building in that city.

The Moline Heating & Construction Co., 320 Sixteenth Street, Moline, has secured the contract to install heating in the $25,000 side addition to the Logan school at Twenty-fifth and Fifteenth Streets.

## Minnesota

### Minneapolis.

Clarence Hawkinson, 3921 Elliot Avenue, and John Rennander, 2210 Bryant Avenue, South, have the plumbing and heating contracts, respectively, on the duplex dwelling being erected at 4936 Lyndale Avenue, South, for Robert Berg.

A. W. Scott, 212 Sixth Street, South, has the plumbing contract, and H. Kelly & Co., 925 Plymouth Building, the heating contract on the Jordan Junior High School to be erected at Twenty-ninth Avenue, North, and James Street.

The American Plumbing & Heating Co., 1308 Nicollet Avenue, has the plumbing and heating contract on the store and lodge building to be erected at 1601 Nicollet Avenue, for James P. Deckas.

The Hotchkiss Plumbing Co., 417 Fourteenth Avenue, Southeast, has the plumbing installation contract on the book store to be erected at 1413 University Avenue, Southeast, for the Perine Book Co.

Conner Bros., 711 Sixth Avenue, North, and the Beck Engineering Co., 1137 Plymouth Building, have the plumbing and heating contracts, respectively, on the gymnasium building to be erected in St. Peter, Minn., for Gustavus Adolphus College.

H. Kelly & Co., 925 Plymouth Building, have the plumbing and heating contract on the school and auditorium building to be erected at Fifth Avenue, Southeast, and Twelfth Street, for the St. Lawrence Catholic Congregation.

The Hughes Heating & Plumbing Co., 1514 East Franklin Avenue, will install plumbing and heating in the residence of Martin H. Otto, at 4820 West Lake Harriet Boulevard, the residence of W. A. Wright at 5120 Aldrich Avenue, South, the $25,000 residence of L. C. McCoy, at 1701 Irving Avenue, South, the residence of A. B. Schultz at 2841 Forty-fourth Avenue, South, the residence of the American Farm Building Co., at 3537 South Dupont Avenue, the residence of W. L. Kullberg at 4029 South Colfax Avenue, and the plumbing in the residence of M. A. Bartholomew at 5025 Fremont Avenue, South.

Vroman-Cook Co., Minneapolis, and the Brookings Construction Co., Brookings, S. D., are to install heating and plumbing, respectively, in the school building to be erected in Brookings.

Plumbing in the residence of T. De Fore, to be erected at 3731 Fremont Avenue, North, will be installed by the Jacobsen Plumbing & Heating Co., 324 Cedar Avenue.

The contract to install plumbing and heating in the residence of G. B. Benton, at 5001 Third Avenue, South, has been awarded to Clarence Hawkinson, 3921 Elliot Avenue. The plumbing in the residence to be erected for McCoig & Co., at 5052 Oliver Avenue, North, and 4049 Harriet Avenue, will also be installed by Mr. Hawkinson. The heating system in the latter will be installed by J. J. Gillis.

The Jacobsen Plumbing & Heating Co., 324 Cedar Avenue, has the plumbing contract on the residence of Edward Kolegraff at 5024 Queen Avenue, South.

Conner Bros., 711 Sixth Avenue, North, are to install plumbing and heating in the residence to be erected at 1128 Vincent Avenue, North.

The heating in the four-story store and office building to be erected at Twelfth Street and First Avenue, North, for Atwood & Co., is to be installed by J. A. Shogren, 1430 West Thirty-first Street.

J. P. Sweigert & Co., 1804 Washington Avenue, North, have the plumbing and heating contract on the $25,000 residence of F. A. Gross, at 1901 Knox Avenue, South.

Hineline & Co., 625 Third Avenue, South, are to install plumbing and heating in Institute Hall to be erected in Duluth, Minn., for the Board of Control of Minnesota.

The Archambo Plumbing & Heating Co., 315 Fifth Avenue,

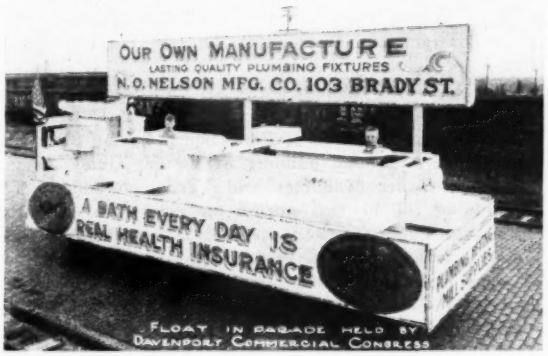
South, Minneapolis, and Tibbets & Wise, Wayzata, Minn., will install heating and plumbing in the preventorium to be erected at Glen Lake, near Minneapolis, for the Lenora Christian Memorial Hospital Association.

Harris Bros., 217 West Lake Street, have the plumbing and heating contract on the residence and garage structure to be erected at 3217 Fremont Avenue, South, for the Glassberg Construction Co.

### Lewiston.

Nusslock & Son, Lewiston, have been awarded the contract to install plumbing and heating in the school building to be erected in Lewiston for the Board of Education of that city.

The accompanying illustration shows the float of the N. O. Nelson Mfg. Co., of Davenport, Iowa, which was recently entered in the parade of the Davenport Commercial Congress, held while manufacturers, wholesalers and retailers were in convention in that city. The float aroused much interest in the city and country towns, and was an effectual means of telling the bystanders that "A Bath a Day Keeps


OUR OWN MANUFACTURE
LASTING QUALITY PLUMBING FIXTURES
N. O. NELSON MFG. CO. 103 BRADY ST.
A BATH EVERY DAY IS REAL HEALTH INSURANCE
FLOAT IN PARADE HELD BY DAVENPORT COMMERCIAL CONGRESS

**N. O. Nelson Mfg. Co.'s Float in the recent Parade of the Davenport Commercial Congress.**

You Fit Every Way." The float measured 7x20 ft., with both sides dressed in a like manner, while in the center were two bath tubs filled with water and occupied by two promising youths. The day of the parade was a hot one, and momentarily at least the curbstone spectators were relieved of any sordid expressions or thoughts of wilting collars when the float passed them.

### Seattle and Vicinity

For several days preceding and succeeding the Fourth of July, constructional activities in Seattle and other Puget Sound cities lagged quite noticeably but the slackening up was but temporary. From present indications and according to the number of permits for residences which have been issued by the City Building Department since the first of July, this month will exceed any of the preceding months since the first of the year in the number of permits issued. Larger building activities, as a whole, are still being held in abeyance for several reasons, including unsettled conditions and the belief existing that materials of all kinds will witness still further decreases.

Generally speaking, however, the plumbing and heating contractors in this district are enjoying a fair measure of prosperity and are optimistically looking to improved conditions during the fall months.

Architect A. H. Albertson reports that plans for the proposed $200,000 annex to the Cobb Building, to be built by the Metropolitan Building Co. will be ready about July 20th, at which time the general contractor will be named, and bids called for the sub-contracts. Plans provide for a five-story structure of fireproof construction, with four upper floors set aside for doctors and dentists.

Architect V. W. Voorhees, Eitel Building, will call for bids immediately for the general and sub-contracts for a two-story brick veneer apartment house to be built for Louis H. Norton on 34th Avenue and East Spring Street. The structure will be steam heated, and will be 80x52 ft. in size.

The Eckart Plumbing & Heating Co., 1615 Third Avenue, has recently received the contract for plumbing, heating and ventilating in the Puritan Theater under construction at East 45th Street and Brooklyn Avenue. The building will cost $118,000. The amount of the sub-contract has not been made public.

The McMahon Plumbing & Heating Co., 723 Pine Street, on a bid of $10,580, has received the contract for plumbing in the Main Street School. Other bidders for the work were: Norton & Spangler, $10,241; Ashwell & Twist, $10,275; Dupar-Blythe Co., $10,490; Ernst & Wolfe, $12,173; Hellenthal Plumbing & Heating Co., $12,179; King Plumbing & Heating Co., $12,047; P. J. Lavan, $11,000; Rautman Plumbing & Heating Co., $10,370; J. A. Scherer, $12,408; Seattle Heating & Plumbin Co., $11,150; J. H. Stack, $10,876; University Plumbing & Heating Co., $11,602; Wenzler & Ward, $11,136; West Coast Heating Co., $11,414.

Norton & Spangler, Henry Building, have received the contract for plumbing in the new annex to the Broadway High School, on their bid of $10,241. Five other bidders were: McMahon Plumbing & Heating Co., $10,580; Rautman Plumbing & Heating Co., $10,927; Ashwell & Twist, $11,900; Dupar-Blythe Co., $12,200; Ashwell & Twist, $12,224.

### Other Cities in the State

Architects Stephen, Stephen & Brust, New York Block, Seattle, are receiving bids for the erection of a two-story and basement brick school building for School District No. 177, just outside the city limits. The structure will be modernly equipped and 80x36 ft. in size.

Henry Rhodes, Tacoma, will erect a new home on Lake Steilacoom at a cost of $60,000. The structure will be two stories high, containing 12 rooms, several bathrooms, and a large hot water heating plant.

The Consumers Central Heating Co., Tacoma, has recently moved to new quarters in the Perkins Building, where offices have been completely remodeled and re-fitted.

At a recent election in Vancouver, a bond issue of $90,000 was voted for the erection of new schools in that city. The first structure will be built at 29th and S Streets, and will cost approximately $20,000.

Figures from the building department, Tacoma, indicate that the month of June, 1921, showed a far larger total in value of permits than for June, 1920. Last month saw 422 permits issued for $377,808. Of this number, 77 were for new residences, with a valuation of $166,175. The first six months of 1921 have shown considerably larger number of new homes erected than for a similar period last year.

The city clerk of Enumclaw, W. E. Heidenger, has issued a call for bids for general and sub-work in connection with the new municipal building to be erected by the city from plans prepared by Architect Harlan Thomas, Arcade Building.

School Board, Centralia, recently awarded to Blows & Tuell, Tacoma, the contract for a new school building, on a bid of $44,823. The contract for plumbing was awarded to Modern Plumbing Co., Centralia, on a bid of $4,275.

The Port Angeles Hotel Co., Port Angeles, has announced that it will construct a new tourist hotel at a cost of $114,000, and that work will be undertaken during the summer.

The city of Kalama will erect two new school buildings to cost $35,000 each, one to be a high school and the other a grade school. Plans have been prepared by Charles H. Durgraff, Albany, and bonds have been voted. The general contract has been let to McCheney & Marshall, Albany, at $9,161, for the grade school, and to Springer & McCall, South Bend, at $17,567, for the high school. The contract for plumbing and heating in both structures was let to Lebanon Heating & Plumbing Co., Lebanon, on a bid of $9,080. The following bids were received for (a) plumbing and (b) plumbing and heating combined: Lebanon Plumbing & Heating Co., (a) $2,150, (b) $9,080; Yundt & Kayser, Kalama, (a) $2,300, (b) $9,275; Hoyt & Walle, Albany, (b) $9,957; W. S. Fleming, Portland, (b) $10,566; Berg-Griggs, Tacoma, (a) $3,589, (b) $11,576; Duach Heating & Engineering Co., Portland, (a) $3,646, (b) $11,589.

The First Methodist Episcopal Church Toppenish, has awarded the general contract to E. Goettling, Toppenish, for construction of proposed new church. Contractor Goettling will handle the sub-contracts. The structure will cost $35,000.

The contract for plumbing in the proposed new $30,000 telephone building to be erected in Mount Vernon by the Puget Sound Telephone Co. has been awarded to Alm & Thompson, of Mount Vernon.

# California

### San Francisco and Vicinity

Endorsement of the new open shop or "American plan" policy of the San Francisco Builders' Exchange which has resulted from the recent labor controversy, has been given by the Master Plumbers' Association. The latter organization does seventy-five per cent of the city's plumbing business, and resolutions approving the stand of the exchange and pledging the support of all its members were adopted by the Master Plumbers' Association at a meeting this week, at which William F. Wilson, president of the organization, presided, with Alex Coleman acting as secretary. Members of the Builders' Exchange are contending that it is up to San Francisco to once and for all adopt the open shop policy at least in the building trades. The building situation is still at a standstill with hardly any plumbing or heating installation proceeding. The unions are consulting with the Chamber of Commerce, and, if they agree to the open shop policy announced by the employers, all work now suspended will commence again at once.

### Los Angeles

Examination for journeymen plumbers before a city examining board will be compulsory in Los Angeles beginning July 27th, under the terms of an ordinance passed. The plumbers will now be required to pass tests of ability. A $2.50 fee is assessed each journeyman taking the examination and $5 is charged master plumbers, although only those of the latter who do actual work are required to take the examination. An examining board is to be appointed by the mayor to consist of a master plumber, a journeyman plumber and a physician. All journeymen who wish to continue working in the city must appear before the board. Passage of the ordinance was requested by the master plumbers of the city who declared that property owners should have protection from inexperienced men.

The Health and Sanitation Committee of the Los Angeles city council has recommended that city engineer John A. Griffin be sent to the East to study new methods of sewage treatment preparatory to the submission of a $45,150,000 bond issue for the construction of three treatment plants, which it is thought will insure better sanitary conditions in this city.

The number of permits for building residences in Los Angeles for the month of June, 1921, was more than twice the number issued for June, 1920. The total valuation was $6,269,000 for the month just ended. The total valuation for permits issued during the first six months of this year is $34,175,000, acording to the statement of city building inspector, J. J. Backus. It is predicted that the building activity for the next six months will show an increase of 50 per cent.

The Hoaglund-Lakin Electric & Engineering Co. has been awarded the contract to install heating in the two-story brick addition to the Budlong Avenue school. The contract amounts to more than $2,000.

On its bid of $4,690, the Thomas Haverty Co. secured the heating contract on the Buchanan Street school, and E. W. Crowell the plumbing on his bid of $4,590. The plumbing on the addition to the Vernon school has also been secured by the Thomas Haverty Co.

The Potter-Strutz Radiator Corporation, and G. C. Sutton, have the heating and plumbing contracts, respectively, on the school to be erected on Bridge Street.

E. W. Crowell has secured the contract to install plumbing in the Wilton Place school. His bid was $7,395. The heating contract was awarded to Thomas Haverty Co. at $11,700.

The P. A. Wolter Plumbing Co. has the contract to install plumbing in a $17,000 residence to be erected in Los Angeles.

The Los Angeles Board of Education is having plans prepared for an additional building at the McKinley Avenue school site, corner McKinley and Vernon Avenues. The new building will be two stories, ten class-rooms, auditorium to seat 1,200, and will cost $240,000. Another school building is to be erected at Bridge Street and Boyle Avenue, to contain eight class-rooms, offices and library.

Arthur Hess submitted the lowest bid for plumbing for the South Park school building. His bid was $2,523; E. W. Crowell bid $3,390 and J. Hokom $3,417. For heating, Thos. Haverty Co., $2,265; J. Hokom, $2,635; Arthur Hess, $2,775; W. W. Brooks, $3,750.

Plans are being prepared for a four-story brick apartment house to be erected at the corner of Sunset Place and Hoover Street, for Fred Siegel. There will be thirty-four, two-room, and twelve three-room suites.

Architect John M. Cooper, 335 Marsh Strong Bldg., has the contract at about $40,000 for a two-story frame and plaster flat to be erected at the corner of Third Street and Ardmore Avenue for Rober Roberti.

J. Hokom, 4312 Monsta Avenue, was awarded the contract for heating the four-room addition to the Michaeltorina school. His bid was $2,095.

Architect W. Horace Austin, Long Beach, has prepared sketches for a twelve-story office building to be erected at Broadway and American Avenue, Long Beach, for a corporation to be represented by Deeble & Chapman, and the City National Bank as fiscal agents. Space is being sold on the own-your-own-office plan. The same architect is preparing plans for an addition to Seaside Hospital at Long Beach.

Graham Bros., 321 East Fourth Street, have obtained a site near Anaheim Street and the Pacific Electric right of way and are preparing to erect a housing plant for equipment and twelve dwellings for employes to cost $30,000.

### Other Cities in the State

Bids have been called for on heating and ventilating installation on the additions to the Haydock grammar school building, Oxnard. Plans have been prepared by Allison & Allison, architects, 1405 Hibernian Building, Los Angeles.

Changes will be made in the heating system of the high and junior high school buildings, Chino, and bids on same have been called for. Information can be obtained from Frank D. Aid, district superintendent, Chino.

John Parkinson, Los Angeles, has been appointed by the Orange county board of supervisors to draw plans for a new hall of records and jail to be erected at Santa Ana. The approximate cost will be $200,000.

Robert H. Orr, architect, Los Angeles, is drawing plans for a swimming pool to be erected in a building of the First Christian church, Sixth and Birch Streets, Santa Ana.

The contract has been let at $129,750 for the erection of the Sweetwater Union High School of National City. The W. C. Merritt Co. of San Diego was awarded the contract for plumbing at $7,487 and Rohde Bros. of San Diego the contract for heating at $6,775.

Architect John C. Austin has been commissioned to prepare plans for additions to three school buildings in Eagle Rock. Bonds in the sum of $35,000 have been voted.

W. McKinney is preparing plans for a $35,000 two-story brick garage and apartment building to be built at Santa Rosa and Higuera Streets, San Louis Obispo.

T. L. Cummins was awarded the contract at $147,988 for a two-story science and agricultural building to be erected at the Bakersfield High school.

The Mountain Meadows Country Club is planning to bui'd a club house to cost $100,000.

The Board of School Trustees of the Lindsay district have awarded the contracts for the new $215,000 school buildings to be erected on the property adjoining the present site. The buildings cover an entire block. Plans call for a swimming pool, and the Visalia Plumbing Co. secured the heating contract for the main buildings.

The Elks of Porterville expect to build a club house at the corner of Main and Morton Streets to cost about $55,000.

A $200,000 addition is to be built to the Pasadena Home for the Aged.

Plans have been prepared for a gymnasium, plunge and recreation building to be erected in Long Beach on the First Christian church property.

H. H. Ford, president of the Redlands National Bank of Redlands, will begin immediately to raze the two-story building now adjoining the north side of the Realty Board building at 631 South Spring Street, and begin the erection of a twelve-story building to cost about $1,000,000.

Thomas H. Ince, motion picture producer, is planning to build a residence on his recently acquired tract of thirty-four acres near Beverly Hills. The residence will cost $100,000.

Paul Kerston has moved his plumbing business into larger quarters on South Pacific Boulevard, Huntington Park.

E. E. Jackson will erect a building in Indio to house a plumbing and sheet metal business.

R. Francis, La Mesa, was low bidder at $2,163 for installation of plumbing in the El Cajon Valley Union school, San Diego county.

Bids have been asked by Walter J. Walters, Bakersfield, secretary of the Kern county high school district, for heating and ventilating systems for the Domestic Science and Agricultural buildings. Charles H. Biggar, Bakersfield, architect, has plans.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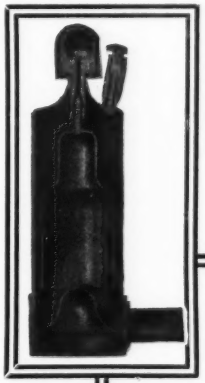

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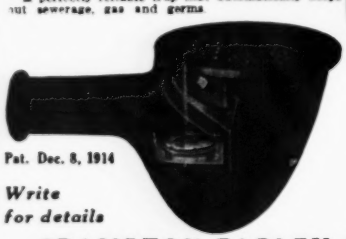

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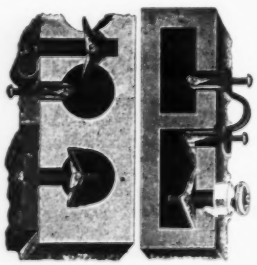

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# Oregon

## Portland

According to the figures provided by the Building Department, home building in Portland has progressed at the average rate of $861,693 a month for the first six months of 1921, and practically no falling off took place in the month of June. The record is practically three times greater than for the corresponding period of last year. A total of 1904 permits have been issued for residences during the past six months, with a total value of $5,170,160. An encouraging feature of the statistics is the fact that the volume of work has shown a steady increase since the first of the year, with a total of $2,000,00 issued during the last two months alone.

The Hahnemann Hospital Association, Portland, plans to begin immediately the construction of the second wing of the hospital, to cost approximately $100,000, according to announcement by Amedee Smith, executive secretary of the association. The first wing was the Children's Ward, a $140,000 structure.

Contracts for plumbing, heating, ventilating and wiring, will be called for in about thirty days, for the proposed eight-story apartment building to be built at 6th and Madison Streets by Wassell & McBride, Pittock Block. Carl Linde, architect, has prepared plans for the structure, which will be 92x100 ft., containing 84 apartments. The structure will be of reinforced concrete construction, faced with brick and stone.

Finnigan & Williams have received the contract for heating and plumbing in the proposed two-story concrete building to be erected by James Quinn, Worcester Building.

Bids recently opened for the proposed Gymnasium to be built at Oregon City from plans prepared by Architect Morris H. Whitehouse, Railway Exchange Building, Portland, showed Hord-Brooks Co., Portland, low at $24,957. The following bids were submitted for (a) heating and (b) plumbing: Sturges & Sturges, Portland (a) $5,996, (b) $2,446; Kendall Heating Co., Portland, (a) $5,898, (b) $2,580; Pope & Co., Oregon City, $4,600, $1,900; Rushlight & Hastorff, Portland, $5,250, $2,077; McPherson & Urban, Oregon City, (a) $5,364; Hord-Brooks Co. received the general contract, and Pope & Co., Oregon City, the contract for heating and plumbing.

T. M. Barr, Salem, has received contract for remodeling the heating plant at the State School for the Deaf, near Salem.

The Portland Settlement Center, of Portland, has authorized Architects Baker, Vogel, Evans & Roush, Seattle, to prepare plans for the proposed settlement house to be erected at a cost of $100,000. The structure will be 100x100 ft., three stories and basement.

C. J. Kelly, on a bid of $3,800, has been awarded the contract for heating and plumbing in the proposed Henry Engele Building to be erected at 16th and Marshall Streets, Portland.

Yundt & Keyser, Corvallis, on a bid of $2,149, received the contract for installing a central heating plant in the Old Soldiers Home at Roseburg. There were eight bids submitted.

Architect Morris H. Whitehouse, Portland, announces that plans will be ready in the near future for a new three-story hotel at Gearheart to cost approximately $200,000, and to contain about 100 rooms. There will be private baths for more than half of the rooms.

Contract for plumbing in the new three-story apartment house to be erected in Astoria by Joseph Strauss and S. Danz, has been awarded to W. C. Laws of Astoria. The structure will contain 25 apartments of two and three rooms each and will be modernly equipped throughout.

W. S. Fleming, of Portland, on a bid of $6,265, has received the contract for heating and plumbing in the two-story school building in Springfield. The structure will be 111x101 ft., and will cost approximately $50,000. Other bids for heating and plumbing were: McPherson & Urban, Portland, $7,398; Joseph Kaiser, Springfield, $6,595; Long & Cross, Albany, $7,065; Lebanon Heating & Plumbing Co., Portland, $6,364; Rushlight & Hastorf, Portland, $6,590.

# West Virginia

In an endeavor to meet Huntington's rapidly increasing housing needs a $1,000,000 home building corporation has been formed with Frank Enslow, C. W. Cammack, E. O. Young, G. L. Miller and Blair P. Wilson as incorporators. It will be known as the Miller-Huntington Homes Co. The formation of the company means a merger of the Miller Investment Co., the Huntington Home Building Co., and the Cedar Grove Co. These have been the largest and most persistent builders of homes in Huntington, for sale on the installment plan. The merger means a pooling of the interests affected, and the acquisition of considerable additional capital.

The secretary of state has issued a charter to the Duncan-Graham Co., Logan, W. Va., to conduct a plumbing business with a capital of $25,000; W. E. Duncan, R. C. Graham, W. M. Rexrode, Pearl Dingess, Logan; George D. Miller, Huntington.

The West Virginia state board of control has awarded the contract for the plumbing for the law building at West Virginia University at Morgantown to Robert N. Kyle of Wheeling, on his bid of $3,100. Mr. Kyle was also awarded the contract for the heating on his bid of $4,500. The F. C. Elch Co. was awarded the contract for the heating of the new dormitory at Fairmont Normal School on its bid of $9,866. The plumbing contract was awarded to the Bartley-O'Neil Co., of Pittsburgh, Pa., at its bid of $11,178.

# New Jersey

H. J. Eichfeld, 1292 Sheridan Street, Camden, has secured the contract to install plumbing in ten residences to be erected at Twenty-seventh and Mickel Street in that city.

Frank Riegert, 530 North Eighth Street, Camden, has just completed the installation of a vapor heating system in a residence at Fort-first Street and Westfield Avenue.

George W. Algor, Merchantville, has been awarded the plumbing contract on the bank building to be erected in that city, and in the new Field Club Building.

John A. Viereck & Son, Wenonah, are installing heating systems in several large structures in that city, and the plumbing in several residences.

The Trenton Plumbing & Heating Co., 365 South Broad Street, Trenton, is installing plumbing and heating in the St. Mary school, St. Mary convent, and in Alberti's restaurant and market building.

The Trenton Master Plumbers' Association is to move its headquarters from 205 Woolworth Building to 216 Broad Street Bank Building, where larger and better quarters have been secured.


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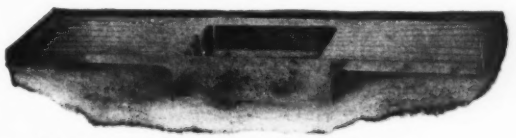

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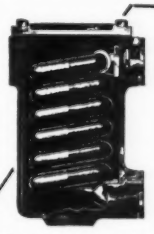

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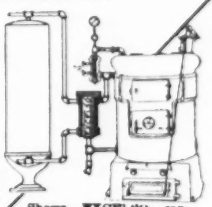

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# New York

## Yonkers to Spend $160,000 to Improve the Plumbing in Its Schools.

The sum of one hundred and sixty thousand dollars has been appropriated by the Common Council of the City of Yonkers for improving the condition of the toilet accommodations in the local public schools. Bids are now being advertised for, and it is hoped to have the work started immediately and completed during the summer vacation, so that when the schools reopen in the Fall the insanitary conditions prevailing in twenty out of twenty-seven of the city's school buildings will have been fully remedied.

At a recent meeting of the Board a report was read by I. T. Beaudrias, one of the commissioners, which revealed the fact that in the majority of the school buildings the toilets are located in the cellar and are maintained under insanitary conditions.

Yonkers has always had the reputation of possessing the best school system in New York State, not excepting the big metropolis to the south of this thriving suburban city of one hundred thousand population. All over the country, in fact, the Yonkers schools are noted for their efficiency, and have served as models for several other communities throughout the United States. Consequently the details brought to light by the lengthy report rendered by Mr. Beaudrias as regards the toilet situation came as a great shock to the Board of Education, and resulted in prompt action. The matter was brought immediately to the attention of the Common Council, which called a special meeting at which a resolution was passed calling for an appropriation of $160,000 and urging that no time be lost in advertising for bids and getting the work started. In introducing the resolution, Alderman John F. David, majority leader of the Common Council, spoke eloquently on the importance of modern sanitary conveniences in the schools, and denounced prevailing conditions as a disgrace to the city. The plumbing in most of the school buildings, he declared, was obsolete, and all talk of patching up the present toilets was out of the question. They must be torn out by the roots and modern sanitary conveniences substituted.

The other members of the Common Council were unanimous in agreeing with Mr. David, and when the matter was presented to the Board of Estimate and Apportionment that body was prompt in approving the ordinance adopted, and in ordering the drafting of a plan by C. Howard Chamberlin, architect of the School Board.

Although the authorities are anxious to have the work started immediately, and completed by Fall, Mr. Chamberlin has expressed doubts as to whether this will be possible. However, he and the Board of Contract and Supply, which has charge of the competitive bidding, have promised to do all in their power to rush the improvements through. Several local plumbing contractors are said to be preparing to submit bids, and as soon as these are in, the contract will be promptly awarded.

Five years ago an investigation into the sanitary accommodations of the local public schools was made, and at that time there was talk of drastic reforms, but nothing was ever done except for a few trifling repairs. The lion's share of the credit for the present constructive action taken by the municipal authorities belongs to Mrs. Cecelie Harvey, President of the Mothers' Club of Public School 13, of South Yonkers, who, through her organization, made such an insistent demand on the Board of Education that sanitary conditions in that particular school be immediately corrected that the Board was

stirred to action, and an investigation was begun which brought to light the fact that conditions in other schools—notably Schools 4, 6, 9 and 12—were even worse than those prevailing in School 13.

"When our Mothers' Club began agitating for better toilet facilities at School 13, we had no idea of starting a movement that would bring about reforms throughout the entire school system of Yonkers," said Mrs. Harvey to a representative of "Domestic Engineering." "Being a neighborhood organization, naturally our interest was confined to the one school which our own children attend. We deemed it our duty to register a protest against the insanitary conditions existing there. They were truly shameful, and as mothers we realized the extent to which the health and morals of our little ones were menaced.

"We went before the Board of Education with the matter several months ago, and succeeded in getting an appropriation of twenty-five thousand dollars. When we called in local plumbing contractors, however, and asked them to undertake the work of installing new toilet equipment for that sum they laughed at us. No plumber was willing to take the contract at that figure. They told us that, with the cost of materials and labor at their present high levels, it wouldn't pay them to touch the job.

"The matter was allowed to lapse for a while, as we were unable to obtain a larger appropriation. We were determined to get proper toilets, however, and we kept on pounding the Board of Education until finally they consented to hold a public hearing at which we could present our case.

"When I made an address at this hearing, describing the shocking conditions that prevailed at School 13, representatives of Mothers' Clubs in other parts of Yonkers chimed in and told the authorities that conditions in their schools were as bad, if not worse, than at ours. In short, such an outcry was raised that the Board of Education decided to make a thorough investigation of the entire school system, and Commissioner Beaudrias was appointed a committee of one to draw up a report.

"I believe that our success should be brought to the attention of Mothers' Clubs in other parts of the country. They should be encouraged to take similar steps to persuade the authorities to remedy insanitary conditions prevailing in the local schools. For if Yonkers, with its splendid reputation for boasting an up-to-date school system, has been behind in this matter, it is safe to assume that there are many other communities throughout the United States where similar reforms are necessary.

"I believe that 'Domestic Engineering' would be rendering a real service to the public by calling the attention of Mothers' Clubs throughout the country to the success we have achieved in persuading the authorities of Yonkers to make that one hundred and sixty thousand dollars' appropriation. Nobody knows better than a mother how necessary it is for the school to be provided with adequate and sanitary toilet accommodations, and if the various Mothers' Clubs throughout the United States were appealed to in the matter, I am sure a movement would result which would mean the abolition of obsolete sanitary equipment from every school-house in the land."

Mrs. Harvey was greatly interested when told about "Domestic Engineering's" "Bath-a-Day" Campaign.

"A splendid idea!" she commented, enthusiastically. "You can count on the Mothers' Club of Public School 13, Yonkers, to do everything in its power to help the good work. As a matter of fact, after we have got this toilet matter settled, we intend to agitate for the installaion of shower baths in the schools. That will be our next step. We believe that the modern shower bath is not a luxury, but a necessity, and that every school should be well equipped in this respect."


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735 So. Washtenaw Ave.
CHICAGO
Manufacturers
PLUMBERS
LEAD
GOODS
PROMPT DELIVERIES
LOWEST PRICES

**HAMBURG Pneumatic Tanks**

Ready for immediate delivery in the following sizes:

Horizontal Tanks—from 30 in. by 6 ft. to 42 in. by 14 ft.

Vertical Tanks—30 in. by 6 ft. and 36 in. by 6 ft.

Write for Catalog No. 5.

**HAMBURG BOILER WORKS**
**Hamburg, Berks Co., Pa.**

*We also manufacture Steam Boilers, Hot Water Boilers and Plate Steel Drums*

**"BRE HYGIENIC" SPRING SEAT**

Just the seat for that office building or factory job. It has an adjustable spring tension. A spring shock absorber that takes all jar and strain from the bowl. A stop that keeps the seat from striking fixtures in back and a "BRE HYGIENIC" seat.

Get our special prices for your show room or window display.

No. 250

**BRE MFG. CO.**
**Hyde Park Dist., Boston, Mass.**

**HOW DO YOU FIGURE RADIATION?**

With a MOONEY RADIATION CALCULATOR, you can figure the exact amount of radiation necessary for any size room or building, whether steam, hot water, or vapor heat is being used, and do it quicker than by any thumb rule. All on one chart—easily understood. Gives exact amount required. Has been in use for ten years and not one job figured by it has had to be changed.

Send us your name and address, and we will mail you one. Try it, then if you want to keep it, send us $1.25 after five days. We know you will want to keep it.

**T. J. MOONEY**
**NASHVILLE, TENN.**

**3-S**
**Best-By-Test**
**SHORTENED HORN**
**WATER CLOSET FLANGE**

*Write for Catalog and Prices*

**THE SANITARY SPECIALTY CO.**
**232 Mulberry Street, NEWARK, N. J.**


# Massachusetts

### Boston and Vicinity.

Earle K. Woodman, of the advertising department of the "Boston Post," and Karl W. Zoeller, of the Curtainless Shower Co., of New York, were speakers at a recent meeting of the Master Plumbers' Association of Boston and Vicinity. Mr. Woodman discussed the value of newspaper advertising to the master plumber, while Mr. Zoeller gave an interesting talk on the publicity campaign of his organization and on other subjects of interest to the members.

Two members of the Boston association are being congratulated by their fellow members on their recovery from serious illnesses. Frank Lowe, of Chelsea, has entirely recovered, and A. A. Thompson, member of the Boston firm of Thompson & Speare, is reported to be improving rapidly after being away from his place of business for several weeks.

A terrific rainstorm on June 30th necessitated the postponement until a later date of the "annual gambol" of the Heating and Piping Contractors' Boston Association which was planned for that date. The affair was to have been held at the Pemberton Inn at Nantasket, the members making the trip by boat, and an interesting program of "big eats, dancing, base ball, running, jumping, swimming and tub races," had been announced. The announcement of the affair sent out in the form of a large blue print, bore at the top a picture and, in order that members might not make a mistake, it was marked in big letters "This is a Stag." All members were ordered to wear white flannel trousers and be prepared for "the best frolic of the greatest gloom kill'in' variety, ever put across." All these things will apply equally when the postponed event finally takes place.

Andrew F. Curtin, of Medford, Mass., former director of the National Association of Master Plumbers and a former Massachusetts State president, has been named as a member of the committee to have charge of the construction of a new hospital building in his home city of Medford. The hospital is made possible by a bequest of the late Daniel W. Lawrence, of Medford, and a committee of prominent citizens, including Mr. Curtin, has been selected to carry out the plans of the donor.

Patrick Norton, long employed as a journeyman plumber in Newton, Mass., and adjacent communities, has joined the ranks of the master plumbers. He has opened a plumbing establishment in his own name on Church Street, Newton.

Mayor Peters, of Boston, has signed contracts for a considerable amount of school work to be done during the next few months. One of the largest contracts was for the erection and equipping of a half million dollar municipal building for the South End section of the city. The contract for the plumbing in this building was awarded to the W. G. Cornell Co., of Boston, at $16,600, and the heating to the William H. Welch Co., of Boston, at $36,998. Edward C. Kelly, of Boston also was awarded a contract for plumbing work in the Washington-Allston school annex, at $10,869.

The city of Springfield has voted to build a public comfort station in the old Hooker school house on Main Street in that city. An appropriation to cover the estimated cost has been provided by the city council.

Austin McRae who has conducted a plumbing business for several years at 34 Main Street, Concord, Mass., recently has moved to 26 Main Street, Concord, where he has larger quarters. Mr. McRae also has added a line of electrical appliances.

# Connecticut

The John L. Purcell Co., of Hartford, Conn., of which Lieut. Col. John M. Purcell is now the active head, recently has received the contract for installing plumbing in the new Hartford-Connecticut Trust Co. Building at Main and Central Streets in that city. This is one of the largest contracts of the kind awarded in Hartford in some time.

The officers of building inspector, plumbing inspector and electrical inspector at New London, Conn., are to be combined into one department to be known as the building department under the plans just announced. Walter P. Crabtree is expected to be named by the mayor as chairman of the building commission, and Plumbing Inspector Philip J. Tormay probably will be continued in the same capacity, the only change being that he will operate under the building department instead of under the health board as in the past.

Arthur Fellows has opened a plumbing and heating business at Niantic, Conn. Niantic is fast becoming a popular summer resort besides having many all-year-round residents, and offers a good field for a plumbing business.

The contract for installation of the heating system in the new Ferry Street school house, at New Haven, has been awarded to J. F. Seigel Co., of 101 Park Avenue, New York, on a bid of $9,584.

# Maine

C. H. Babb & Co., plumbing of Bangor, Me., will soon open a branch at Lincoln, Me. A location has been secured on Mechanic Street and is being fixed for occupancy. The company has had it in mind to establish a branch at Lincoln for some time but has been unable before to find quarters. Sewers are to be installed in the town this summer, which will mean much work for plumbers. James Swett, of Bangor, will be in charge of the Lincoln branch for the Babb company.

# Canada

## PROVINCE OF QUEBEC

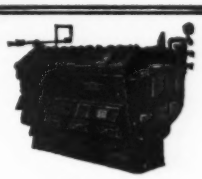
### Montreal.

At the corner of Van Horne and Park Avenue a factory is being built for the Standard Paper Box Co., at a cost estimated at $200,000. The heating has been awarded to D. A. Bethune, 483 Bleury Street, and the plumbing will be let soon.

A two-story building to contain stores and apartments is being erected on St. James Street for E. Limoges, 2187 St. James Street, at an estimated cost of $12,000. The plumbing and heating are being installed by J. A. Lapres, 294 St. Joseph Boulevard West.

J. St. Amand, 189 Laurier Street, West, has the plumbing contract on a $12,000 three-flat building being erected in Outremont.

J. Malchelosse, 188 Edna Street, has the plumbing and heating on two $12,000 residences in Verdun.


ECONOMY  EFFICIENCY

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**Pierce Down Draft, Magazine Feed, Smoke Consuming, Heating Boiler**
Saves Fuel / Labor

*Manufactured only by*
**PIERCE, BUTLER & PIERCE MANUFACTURING CORP.**
Brooklyn NEW YORK Philadelphia
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**"HAAS" Water Closets**

are high grade, insuring maximum service and minimum expense.

**PHILIP HAAS CO., DAYTON, OHIO**

THE INCOMPARABLE
NIEDECKEN
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HOFFMANN & BILLINGS MFG. CO.
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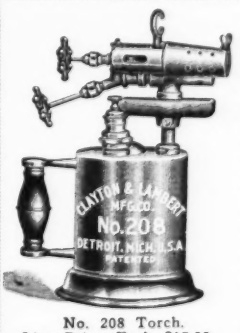


No. 208 Torch.
List Price Each $17.00.
Ask for Discount.

**Fire!**

The new, remarkable No. 208 DOUBLE BLUNT NEEDLE TORCH produces the hottest fire, from 200 to 300 degrees hotter than ordinary makes. Soon pays for itself in time and fuel saved. The improved design practically eliminates carbon deposit. Burns either Kerosene or Gasoline by changing the Jet Block. Jobbers supply at factory price. Send for catalog.

**Clayton & Lambert Mfg. Co.**
10561 Knodell Ave., Detroit, Mich., U. S. A.

**Easily Cleaned**

The APEX Closet Bowl has special features that place it in a class by itself.

Clean-out device located at head of trap. Any obstruction can be located and removed in five minutes without disconnecting from floor or water. **Cannot overflow.** Silent in operation.

***Find out all about the APEX before installing another closet bowl. Write***

**THE APEX SUPPLY CO. INC.** 203 E. STATE ST. TRENTON, N. J.

**FOR lasting quality and true capacity use *"KOVEN"* Pure Iron, Double Row Riveted, Galvanized Range Boilers, or *NACO* Galvanized Range Boilers made of open hearth steel. These boilers may be bought of jobbers everywhere.**

**L. O. KOVEN & BRO.**
**154 Ogden Ave., - - Jersey City, N. J.**

**The Cutter Wheel You Want**
**ELIMINATES WASTE OF TIME AND LABOR**

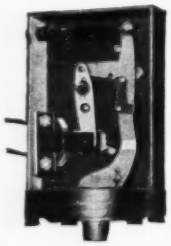
B&B THIN BLADE PIPE CUTTER WHEEL

**is made by experts who devote their time exclusively to making cutter wheels. They know how. The steel used is treated scientifically to uniform hardness, so that the extremely thin blade will not break. Cuts clean and clear with least resistance.**

**Our Positive Guarantee**

**goes with every B. & B. Cutter Wheel. Get one from your jobber. If it doesn't do all we claim for it, tell us; if it does, tell the other fellow.**

**B & B TOOL & MACHINE WORKS**
**549 W. WASHINGTON BLVD. CHICAGO**
***Cutter Wheel Specialist***



Our Type "R" switches are standard equipment on a great many high grade water systems.

**The Pressure Switch**
**on an Electric House Pump is required to operate in damp basements. Ordinary steel and iron are subject to rust and are not suitable material for such devices.**

Type R
Penn Pressure Switches
**have non-rusting metals for all wearing parts. The Bearings are made of brass and pivot pins of monel metal. Neither of these are subject to corrosion.**

*Manufactured by*
**Penn Electric Machine Co.**
**114 Eighth Street Des Moines, Iowa**

## QUESTIONS AND ANSWERS.

(Continued from Page 112.)

Heat registers located above the breathing line should have a free air area equal to the area of the flue. For example, if the flue is 18x24 inches the register should be 24x36 inches. This is based upon the register having 50 per cent of free air area. A ventilating register should be located at the floor line for use when the fresh air supply is heated. For summer ventilation and the removal of hot air from the room a register of similar size should be located at the ceiling. Both registers should be connected into the same flue but they should never be open at the same time. The free area of the ventilating register should equal the area of the ventilating flue.

The efficiency of a vent flue depends upon the velocity of the air movement due to height and the temperature differential maintaind by the aspirating coil. The size required depends upon the same conditions. Architects, in planning a school building, doubtless to simplify building construction, usually make the cross sectional area of the vent ducts the equal of the hot air flues and the same size for each floor. The velocities in the heat flues increase with the height of the building, that is, the flue to the first floor register being the shortest the velocity is the lowest. The flue to the second floor being longer the velocity is greater, and the velocity in the heat flue to the third floor is still further increased if the building is three stories high. The reverse is true of the vent flues. The vent flue from the top story room is the shortest and the velocity the lowest, the first or ground floor vent flue is the longest and the velocity the greatest.

If the indirect heating system is calculated to warm the rooms as well as to temper the air required for ventilation, it is necessary that the heat loss from each room in B. t. u. shall be determined for conditions prevailing when the weather is most severe and the outside temperature the lowest. This detail is calculated the same as for direct, or any other method of heating, and to the B. t. u. required for heating the B. t. u. required for tempering the air must be added in order to determine the sq. ft. of radiation, size of flues and registers, etc., required. When heating as well as ventilating is provided the air supply enters the rooms at a much higher temperature than is required for ventilation only. Allowing for a loss of 5 or 10 degrees between the radiator and register it is usual to assume certain temperatures. For example, with low pressure steam at 2 lb. pressure and air entering the radiator at zero, a flue temperature of 100 to 125 degrees is assumed.

Aspirating coils must be proportioned to heat all air to be exhausted to a temperature at least 20 degrees above the maximum outside temperature. This detail requires the use of large radiators or coils in vent flues, if the system is to prove efficient. The amount of air moved is always dependent upon weather conditions. When certain stated results are desired or required, it will be found more economical to use a disc or propeller fan for exhausting the air. Electric current is now available in every small town as well as city, and aspirating coils in vent flues are not so frequently used as formerly. When a fan is installed positive results are secured, and the air is handled at much less cost than is possible by the use of aspirating coils.

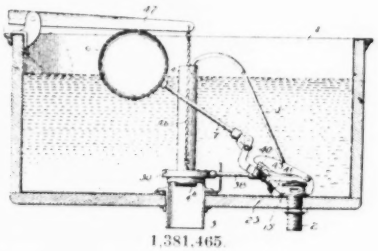
---

**President Harding will soon appoint** three men to act as a board of arbitration in settling claims against the government growing out of the cancellation of war contracts, which are said to amount to something between $250,000,000 and $300,000,000 and are constantly becoming larger because of the addition of interest and other charges. These arbitrators will be paid by the Emergency Fleet corporation, but will be distinct from it.

# Patents

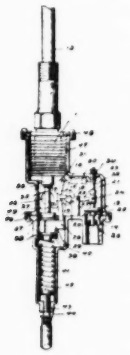
### Plumbing Department.

1,381,465. Flush Tank. William Ralph Hursey, Asheville, N. C., assignor of one-fourth to Basil H. Oates, Tuscaloosa, Ala. In a flush tank apparatus, an inlet valve lever, an outlet valve lever, a latch controlling the latter, and a float lever having a part adapted to engage either said inlet lever or latch.

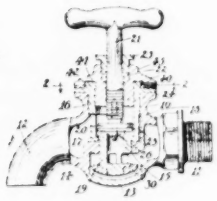


1,381,465.

1,381,652. Thermostatic Gas Valve Control. Luther D. Lovekin, Philadelphia, Pa., assignor to The Lovekin Water Heater Co., Philadelphia, Pa., a firm composed of Margaret J. Fowler, J. Scott Fowler, and Philip D. Fowler. In an automatic gas regulator, a thermostatic element, a rod rigidly connected



1,381,652



1,381,766.

to and longitudinally adjustable with respect to said element, a retarding spring in line with the said rod, a compression adjustment for said spring and a snap-action valve-operating mechanism including a lever free from engagement with said retarding spring and carried by said rod, said mechanism being adjustable as to range and critical temperature by the adjustment of the rod and spring.

1,381,766. Tap for Controlling the Supply of Fluids. Edwin Charles Tonkin, Stockwell, London, and Henry Thomas Collins, Hampstead, London, England. In a tap for controlling the supply of fluids, the combination with a main and an auxiliary valve, of a single securing and operating member which secures the main valve in place and which operates the auxiliary valve to bring it into and out of closing position, and means to lock together the securing and operating member and the auxiliary valve, said locking means comprising a locking pin operatively carried by one of said members to be locked together and a shoulder in a recess in the other of said members, into which recess the pin projects and with which shoulder the pin contacts to lock together the said parts and permit the auxiliary


CROWN

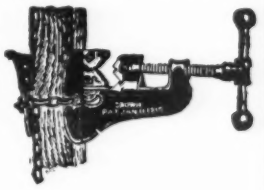
**Post Pipe Vise**

Holds Tight and Firm Anywhere

Can be attached to any wood or iron, round or square post, pole or tree.

Jaws of best tool steel, hardened and drawn. Will not crush or allow pipe to slip. Made in two sizes.

Write for particulars and catalog.



*Ask your jobber for "Crown" Post Vises, Pipe Dies, Pipe Cutters, Etc.*

**CROWN DIE & TOOL CO., 555 W. Monroe St., Chicago**

**"QUIK-OPE"**

Bibbs, Bath and Basin Cocks stand the test of Service. It is built into them.

MANUFACTURED BY

**THE HAYDENVILLE COMPANY**

HAYDENVILLE, MASS.

**Gerstein**

**Cistern and Riveted Pressure Boilers**

can be described in one word—

**Everlasting**

They not only *last* but give continuous satisfactory service.

Made in any size, pressure or capacity desired.

Write for details.

**Gerstein Bros. & Cooper**

Coppersmiths

1-3 W. Third Street So. Boston, Mass.

**Chas. F. Hause Mfg. Co., Inc.**
**Omaha, Neb.**

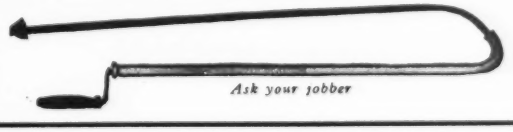
*Makers of the famous*

**"HAUSE" PIPE JOINT CEMENT**

In liquid and powder form. Sets like gum. Allows no leaks. And the

**"HAUSE" CLOSET AUGER**

**Made of seamless brass tubes.** **Indispensable to plumbers.**



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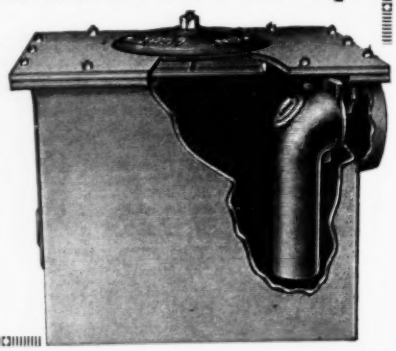
**The Boston Grease Trap**

(Square Pattern)

Widely Known and Famed for Service.

This trap is particularly desirable for use under sinks where the height is limited.

Easy to install —easy to clean out. Keeps pipes free from grease.



**R. ESTABROOK'S SONS**

1st and C Sts.,
South Boston, Mass.

**The "S & K" Rainbow Shampoo Fixture**

C-1094 Regular Compression

A high grade fixture in every respect. Low price permits its use on any job.

Furnished complete with hose and sprinkler.

In ordering specify distance from center of cock holes.

Write for prices and details of the complete "S & K Line."

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549 Fulton St., Chicago, Ill.

Eastern Representative:
J. W. Gannon, 30 Church St., New York City.

Pacific Coast Representative:
Wm. P. Horn Co., Rialto Bldg.
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**The GERARD Brass Circulating Tube**

***Outlasts the Boiler***

Every range boiler must have a circulating tube and experience has proven there is nothing better for this purpose than seamless drawn annealed brass tubing.

The Gerard Tube runs entirely through cast brass bushing and is swedged out over end of bushing. No solder used. Most satisfactory circulating tube made.

Furnished in sizes to suit All Range Boilers.

*Write for folders and particulars*

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DICKSON CITY, PA.

**Don't Be Content**

With Ordinary Roof Flashings

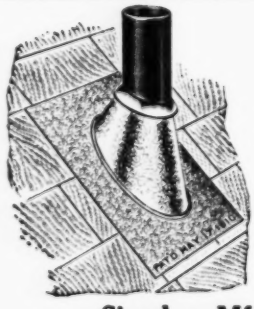
Specify and Use the Reliable

**"SIMPLEX"**

Made in

All Lead—Copper—Galvanized Iron

Every Flashing Adjustable
Every Flashing Perfect

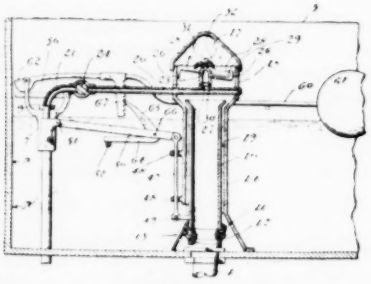


Manufactured only by

**Simplex Mfg. Company**

313 S. Clinton St. Chicago

valve to be operated, the relative dimensions of the pin and recess being such as to permit lost motion between the securing and operating member and the auxiliary valve whereby the former can be adjusted within limits to secure the main valve in place without operating the auxiliary valve, substantially as described.

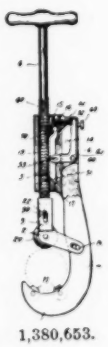


1,381,710

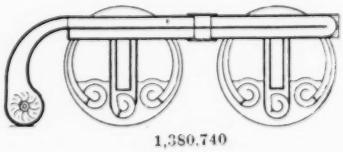
1,381,710. Water-Operated Ventilator for Toilets. Carl A. Krantz and Gustavus E. Krantz, Chicago, Ill. In a toilet of the kind described and in combination, a bowl, a flushing tank therefor provided with an inlet and with an outlet into said bowl, a valve for controlling the admission of water through said inlet and a valve for controlling the discharge of water through said outlet, and a single co-operating mechanism for controlling both of said valves, whereby a measured amount of the water will remain in said tank after discharge, and means for ventilating said bowl, including a fan, a water motor for driving said fan and receiving its operating liquid from said inlet, said motor arranged to discharge the spent water into the said tank.

### Heating Department.

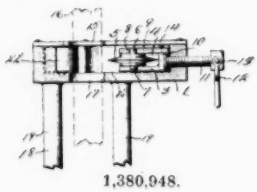
1,380,653. Pipe cutter. David Kilgour, Jr., Vancouver, British Columbia, Canada. In a pipe cutter of the kind described, a cutter, a threaded handle bar controlling the cutter, a frame in which the handle bar is slidably mounted, said frame having a recess at one side of the handle bar, a threaded block mounted in said recess to move toward and from the handle bar to engage and disengage therewith, said frame and block having engaging surfaces inclined to the axis of the handle bar and positioned to resist lengthwise movement of the block, and a lever pivoted in the frame and having controlling connection with said block.



1,380,653.



1,380,740



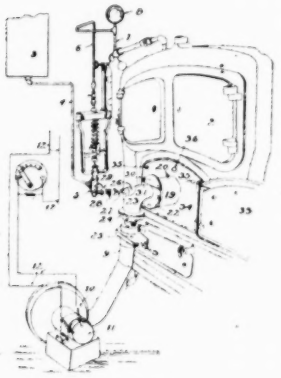
1,380,948.

1,380,740. Oil-burning furnace front. John Reid, New York, N. Y. In an oil burning furnace front of the forced draft system of furnaces and having front and back plates forming an air pocket therebetween, an air passage from a suitable air supply, one wall of said passage being an intermediate wall distancing said front and back plates and

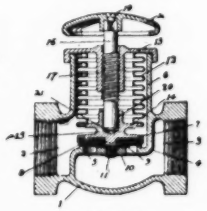
inclosing said air pocket, and a deflecting wall within said pocket associated with said outer wall in distributing the air throughout said pocket before reaching the flame.

1,380,948. Pipe-cutter. John Edward Donnelly, Branford, and Anthony Joseph Grieser, New Haven, Conn. A pipe and rod cutter comprising a cutter head having a rectangular shaped chamber therein, a removable cover for said chamber, pipe receiving apertures extending through the cutter head and its cover, rollers disposed in the chamber of the cutter head and having bearings in the bottom of the chamber and in the cover and adapted to engage a pipe during a cutting operation, a slidable rectangular shaped cutter carrier disposed in the chamber, a cutter wheel pivoted in a chamber of the carrier, said chamber being provided with a detachable cover in which the cutter has a bearing, a threaded adjusting screw threaded through the end wall of the cutter head and pivoted to the cutter carrier, said adjusting screw being radially disposed in relation to the cutter and in the same plane as the cutter.

1,381,708. Automatic Oil Burner for Furnaces. Arthur E. Hauck, New York, N. Y.; Adolph H. Stein, executor of said Arthur E. Hauck, deceased. A furnace provided with an oil burner composed of a burner T tube with flame perforations in its upper surface, means for supporting said tube, an inwardly extending bar adapted to rest in the path of a flame, means for supplying fuel oil for the burner tube and means for supplying air.



1,381,708



1,381,818

1,381,818. Packless Valve. Weston M. Fulton, Knoxville, Tenn., assignor to the Fulton Co., Knoxville, Tenn., a corporation of Maine. A packless valve comprising a valve casing, a valve member therein, an expansible and collapsible corrugated tubular wall having an inherent resiliency and connected to said valve member, said wall providing a fluid-tight partition in said valve casing, a socket member connected to said wall on the opposite side from said valve member, and a valve stem loosely fitting in but unattached to said socket member, said valve member being moved in one direction and said wall stressed by the corresponding movement of said valve stem, and said valve member being moved in the opposite direction throughout its range of movement by the resiliency inherent in said wall as said valve stem is withdrawn.

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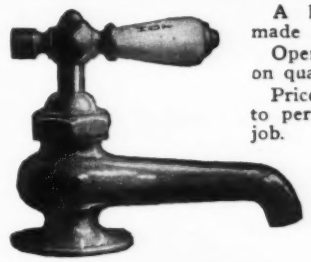
Syracuse, N. Y.—H. J. Gaebler has reopened his plumbing and heating business at 122 Mildred Avenue, being formerly located at 1456 Midland Avenue.

Hutchinson, Kans.—The M. M. Stevens Plumbing Co. has succeeded to the plumbing business of Stevens, Gill & Co., Mr. Kissick and Mr. Gill having sold their interest in the business to M. M. Stevens.


"ACME" Basin Cock



A high-grade product made for lasting service.
Opens and closes fully on quarter turn of handle.
Price reasonable enough to permit its use on any job.

If your jobber hasn't "ACME" in stock write us, giving his name.

*We also make a line of Boiler Drain Cocks and Sill Cocks*

Acme Brass Works, Detroit, Mich.

New York Office, 150 Nassau St. George B. Muller, Eastern Sales Mfg.

"EVER-HOT" SOLDERING IRON AND TORCH

No. 4 $1.25 — No. 3 $1.00

Handiest tool ever devised for the plumber and steam fitter. Operates perfectly under all conditions. It does the work of both a Soldering Iron and Blow Torch—is light, compact and easily handled.

The workman who has used the EVER-HOT is never satisfied with old methods again. Price, including No. 1 Tip, $11. Extra Tips furnished at prices given.

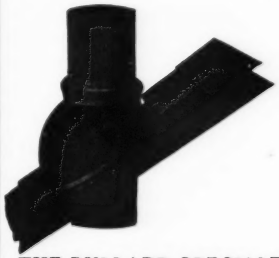
We have a special metal guaranteed to solder all metals. Largely used for cast iron water jackets, etc. Price, $4 per lb.

No. 6 $1.50 — No. 1 $1.00 — No. 2 $1.50

If your jobber cannot supply you, write us direct.

The Everhot Mfg. Co. Dept. D Maywood, Ill.

NO ROOF IS SUPERIOR TO ITS FLANGE



Therefore, some PLUMBER is the father of every leaky roof.

*The Bullard Roof Flange*

is acknowledged as the only PERFECT FLANGE by busy men who have made satisfying installations.

THE BULLARD SPECIALTY COMPANY, Tiffin, O.

INBRACO

BALL COCKS
FLUSH VALVES
TANK TRIMMINGS

THE INDIANA BRASS CO.
FRANKFORT, INDIANA

# Classified Advertisements

**8 cents for each word including heading and address. Count seven words for keyed address. Minimum $2.00. One inch $4.00. Cash must accompany order. Copy should reach us Tuesday morning.**

## Situations Open

SALES REPRESENTATIVES WANTED—Able and active sales representatives wanted throughout the States to handle a line of pneumatic pressure systems, deep well, condensation and centrifugal pumping machinery. Company established many years has complete manufacturing plant and many thousands of pumps in operation. An excellent opportunity for a number of capable representatives. Address 345, "Domestic Engineering," Chicago. 6-18 tf

HELP WANTED—YOUNG MAN FOR invoice and billing department of large wholesale Plumbing and Mill Supply house. Good opportunities. State age, experience and salary expected. P. O. Box 1033, Memphis, Tenn. 7-9/16

WANTED—SALESMAN NOW CALLING on the plumbing trade to take a high grade standard article as a side line. Not a specialty. No matter what you're selling, our goods will more than pay your expenses. We have several travelers selling our goods exclusively, but desire to open new territory. Correspondence confidential. Plant located in Michigan. Address 336, "Domestic Engineering," Chicago. 6-11-tf

SALESMAN WANTED — SALESMAN for plumbers' brass goods. High grade line selling direct to plumbing trade. Several territories open. Can be carried as side line. Applications confidential. Address 353, "Domestic Engineering," Chicago. 7-16

## Situations Wanted

SITUATION WANTED—WITH PROgressive shop as salesman to secure jobs by man who can develop business. Original methods resulting from shop selling experience. Western or southwestern territory preferred. Contract required. Address 352, "Domestic Engineering," Chicago. 7-16

## For Sale

FOR SALE—TWO HEATING BOILERS, good condition. Ideal hot water sectional boiler Number 25-5 S, rated 1825 sq. ft. radiation. Price $160 f. o. b. Albuquerque, New Mexico. Spencer Magazine Feed Steam Tubular Boiler, rated 700 sq. ft. radiation, $145 f. o. b. Albuquerque. Write to N. J. Strumquist, Jr., Heating Contractor, 323 N. Sixth St., Albuquerque, New Mexico. 7-16

FOR SALE—PLUMBING AND HEATING business. Live city of 7500. 1920 business $19,000. Will sell at invoice, about $1500. Marshfield Plumbing & Heating Co., Marshfield, Wis. 7-16-23

## Miscellaneous

MR. PLUMBER:

If you would be interested in a plan whereby you can add a large number of good customers to your present list, ask us to explain plan D-7. A postal will do.

Sincerely,
The Success Club,
1126 Masonic Temple,
Chicago, Ill.
July 16.

TIME SHEETS, JOB TICKETS, ESTImating blanks, illustrated stationery, blotters, etc. For plumbers, builders and electricians. Reasonable. Send for samples and price list. Prompt service. L. Fink & Sons, Co., Inc., Elm Avenue, Laurel Springs, New Jersey.

WE HAVE A GOOD MARKET FOR your excess couplings. Republic Pipe & Iron Corp., 1185 Flushing Ave., Brooklyn, N. Y. 10-9 tf

**$1\frac{1}{2} \times \frac{3}{4}$ RED. ELLS**

Send for free Booklet "How to Systematize the Stock Room and Build Bin Racks."

**BIN LABELS**

For water, gas, steam, plumbing, mill and auto supplies. Over 10,000 different kinds. Send for samples.

Haddon Bin Label Co.
Haddon Heights, N. J.

**Are there 5 and 10 cent pieces lying around your shop in the form of PIPE COUPLINGS? If so, pick them up and advise us amount of your accumulation.**

**JOHN W. MOON**

**1420 Chestnut St. Philadelphia, Pa.**

SELL YOUR SURPLUS COUPLINGS and fittings. Write us. The A. & J. Mfg. Co., 557 W. Lake St., Chicago. tf

## Government Proposals

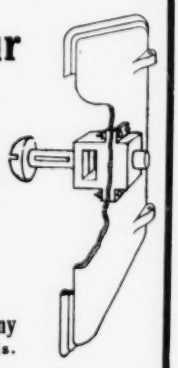
TREASURY DEPARTMENT, Supervising Architect's Office, Washington, D. C., July 8, 1921. Sealed Proposals will be opened in this office at 3 p. m., July 27, 1921, for a water softening plant at the U. S. Public Health Service Hospital No. 2 (Broadview), Chicago, Ill. Drawings and specifications may be obtained from the Superintendent of Construction at that building, or at this office, in the discretion of the Supervising Architect. Jas. A. Wetmore, Acting Supervising Architect. 7-16

## Use This Page To Get What You Want

**If you are looking for competent employes; or if you contemplate a change in position, have a patent for sale; wish to purchase or sell a plumbing and heating business; second-hand machinery or tools; form a co-partnership, etc., your advertisement on this page will put you in touch with the people you desire to reach.**

The cost of insertion is only eight cents a word and may mean many dollars to you.

## The Need of the Hour



Here is a fuel-saver that reduces coal bills 20%. The Z. T. Soot and Gas Consumer is easy to install on any steam or hot water boiler, or hot air furnace.

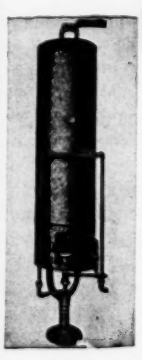
Produces better combustion. Permits use of cheaper fuel. Holds fire longer.

Generates more heat from coal. Requires less attention to fire.

A good business getter for you.

Write for catalog

**Z. T. Soot & Gas Consumer Company**
**346 Main Street Oshkosh, Wis.**



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**COMBINATION BOILERS AND GAS WATER HEATERS**

**ECONOMY GAS BOILERS**
**PEERLESS GAS BOILERS**

*Your Jobber Sells Them*

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